



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>

NYPL RESEARCH LIBRARIES



3 3433 06274119 8

1

—

1

VOA
+
CHEMICAL

CONCRETE TRADE JOURNAL

Published by the Concrete Institute of America

Volume 1, No. 1
January 1914

Chemical Trade Journal
Supplement, July 27th, 1895.

THE
CHEMICAL TRADE
JOURNAL:

A WEEKLY NEWSPAPER DEVOTED TO

The Commercial Aspect of the Chemical and Allied Industries.

EDITED BY

GEORGE E. DAVIS.

FORMERLY ONE OF HER MAJESTY'S INSPECTORS OF ALKALI WORKS.
CHEMICAL ENGINEER AND CONSULTING CHEMIST.

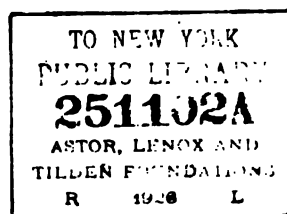
VOLUME XVI.

[JANUARY TO JUNE, 1895.]

MANCHESTER:

DAVIS BROS., 32, BLACKFRIARS STREET.

1895.



MANCHESTER :

PRINTED BY DAVIS BROS., 32, BLACKFRIARS STREET.

THE CHEMICAL TRADE JOURNAL

AND

OIL, PAINT and COLOUR REVIEW.

Publishing Offices : 32, BLACKFRIARS STREET, MANCHESTER.

No. 398.

SATURDAY, JANUARY 5, 1895.

Vol. XVI.

Contents.

	PAGE		PAGE
Requiescat in Pace	1	Trade Notes	7
Technical Instruction in Manchester	2	Miscellaneous Chemical Market ..	8
Phosphates—their Production and Consumption	3	Tar and Ammonia Products	8
People's Palace Day Technical School	4	Liverpool Mineral Market	8
The Analysis of Bauxite	4	Liverpool Oil and Colour Market ..	8
Some Patent Artificial Fuels	4	Tyne Chemical Report	9
The Dyers' Combination	4	West of Scotland Chemicals	9
Nitrate, Indigo, and Tallow in 1894 ..	5	Hull Paint, Oil, and Colour Report ..	9
Notes on American Turpentine	5	The Metal Market	9
Comparative Value of Chromium Fluoride and Bichrome as a Mordant for Wool	6	Report on Manure Material	9
Correspondence	7	New Companies	10
Exports of Petroleum from U.S.A. ..	7	The Patent List	10
		Gazette Notices	10
		Imports	11
		Exports	13
		Prices Current	16

LATE ADVERTISEMENT.

WANTED a Situation as Foreman by a Phosphorus Manufacturer; willing to put down a Plant and manage the same.—Address, "Phosphorus," *Chemical Trade Journal* Office, Manchester.

Notices.

ON JANUARY 19TH, 1895, OUR
ANNUAL SPECIAL ISSUE
Will Appear as Usual.

THIS DOUBLE NUMBER will, in addition to the ordinary features of the *Journal*, contain

ORIGINAL ARTICLES

of special interest to Chemical, Soap, Paint, and Varnish Manufacturers, Paper Makers, and users of Chemical Plant, &c.

It will also contain a number of Articles of general interest to Analysts, Metallurgists, Chemists, and the Chemical Trade, including a

COMPLETE REVIEW OF 1894;

An Article Illustrated with Original Photographs on

"**REMINISCENCES OF JOHN DALTON,**"
&c., &c.

Single Copies, Post Free 4d.

Special Advertisement Tariff: Extended Circulation.
See Advertisement on page 8.

All ORDERS for Advertisements and Copies should be sent as early as possible to

DAVIS BROS., 32, Blackfriars-st., MANCHESTER.

Advertisements.

Prepaid Advertisements of Situations Vacant, Premises on Sale or To be Let, Miscellaneous Wants, and Specific Articles for Sale by Private Contract are inserted in the *Chemical Trade Journal* at the following rates:—

30 Words and under, 2s. 6d. per insertion
Each additional 10 words 0s. 6d.

REQUIESCAT IN PACE.

ACCORDING to our usual custom at this season, we again indulge in the pleasure of greeting the readers of the *Chemical Trade Journal* with our best wishes for the year that has just begun. Our greetings might perhaps have been more profuse if the results of the past year's work had been such as to justify a more jubilant tone, but though it may be a good general maxim to say nothing but what is good about the dead, we may perhaps be pardoned for excepting 1894 from a privilege which would virtually prevent us from saying anything at all about the defunct year. One would almost be inclined to think that the poet who described man's blessedness as a continuous futurity must have been in his business hours connected with the chemical trade, and though perhaps we may now think we see a break in the sky, and catch momentary glimpses of silver cloud-lining, we have learnt the lesson of disappointment so often that we become more and more chary with regard to our anticipations for the future.

It is perfectly true that the volume of trade during 1894 has exceeded that in the preceding year, but the general lament has been that this has been no real indication of the pecuniary advantages which manufacturers have derived from their business. The current of prices from the beginning to the end of the year has been an almost uninterrupted record of retrogression, and this has probably made itself even more seriously felt to individual producers than the great coal war of 1893. Last year we dwelt with some anxiety upon the effects that were likely to follow from the addition of large quantities of new bleach to an already overstocked market, and an examination of prices will show that our anxiety was not without foundation. The situation as regards bleach has, of course, been aggravated by the phenomenally low price of saltcake, and this in turn has produced what may be described as a secondary aggravation. The bareness of profit per ton of bleach has induced makers to keep their tonnage of production up to the highest figure possible under the circumstances, with the inevitable result that the market has never had a moment's respite from the overwhelming mass of production with which it has been encumbered. The cheapness of salt-cake, too, has induced more makers to go in for caustic, and this, combined with the extensive sales of caustic liquor in the South, has had the result of producing a depression in price which even the Christmas holidays in Lancashire will probably be unable to remove. Ammonia-soda alkali has been standing for the greater part of the year at a price which places dividends and miracles on the same footing, and though the last month of the year has seen a slight advance, we are inclined to think that it will only mean a decreased minus profit to those whose production is not effected on the most economical lines. It is generally understood that the low prices which have ruled are due to antagonism between leading firms, and though we should

be sorry to oppose our judgment to theirs, we cannot but think the policy a questionable one. Every day it seems to us that rectification of matters will become more and more difficult, as not only are users of alkali becoming educated to low prices, but consumers have also been under the stimulus of necessity to make themselves equal to the occasion, so that when the battle has ended, and the chief opponents agree to shake hands, they will find themselves face to face with a field of circumstances entirely different from that which obtained when the struggle commenced, and that the low prices which were then matters of choice of policy will have become permanent fixtures by operation of the ordinary laws of supply and demand. The American production of alkali has very largely increased, and chemical merchants know only too well that the Continent has not only become capable of looking after itself, but that it is now a not insignificant competitor with our own production. Indeed, to such an extent is this the case that it is commonly reported, on the authority of those "who know," that a large proportion of the soda crystals made in London are made not from Cheshire or Lancashire ash, but from the Continental article.

With respect to sulphuric acid there is little to say, as the agreement between the great pyrites companies and the United Alkali Company has kept the price of sulphur from sinking, and vitriol has merely remained *in statu quo*, because it could not possibly be any lower. Hydrochloric acid, too, has been anything but a gold mine, as, though the price per carboy may appear tempting on paper, it loses a great deal of its fascination when the accompanying item of salt-cake is also taken into account.

To a certain extent the past year has been noteworthy on account of electrolytic attempts to disentangle the webs of combination with which Nature stimulates the inventive genius of man. So far as these attempts relate to bleach and caustic, we are still unable to pronounce a verdict. The Alkali Chemical Company has been satisfied with the results of its experimental working, and has a large works in course of erection for large scale production, while the Vautin process has been at work on a considerable scale near Bolton for some time. It is true that the unofficial reports of the results obtained there indicate a greater yield of old metal than of bleach and caustic, but this may simply be one of those inevitable accompaniments with which the development of new processes is always surrounded. The process that seems so far most likely to offer a solution of the problem is that of Mr. Castner, at Oldbury. The plant which was put down there on a semi-manufacturing scale, yielded results so promising that we are curious to know why so little has been heard recently about the process. The nitric acid process for the production of chlorine has not been forgotten, and more will probably be heard about it. One syndicate, if we may judge by newspaper reports, has been very successful with its experimental working, and we are told on the same authority that its one pound shares promise to be worth thirty. Apparently the syndicatees do not take quite such a hopeful view of the situation, or the shares would probably stand at a somewhat higher figure than from eight to ten shillings, unless the undertaking be a purely philanthropic one.

With regard to miscellaneous chemicals, tar products, manure, etc., etc., we have little to chronicle but a continued stagnation, or, what is practically the same thing, an absence of remunerative prices.

The vigilance of Conservancy Boards and River Commissioners has been greatly on the increase during the past

twelve months, and many manufacturers have had to realise, perhaps to their immediate sorrow, but we trust to their ultimate gain, that the conditions under which they may work are becoming year by year more circumscribed. A noteworthy attempt to meet this difficulty has been made by Mr. Belton, of Shrewsbury, in the manufacture of sulphate of ammonia, and the doings of wool scourers, dyers, bleachers, and other manufacturers producing liquid effluents throughout the country would supply a lengthy account of capital expenditure which has been necessitated by the improving spirit of the times.

It seems to us that our chief source of consolation, and our best basis for future hopes, is the fact that the chemical manufacturer has so long been accustomed to think himself a happy man if he realises a minimum of profit. He has accustomed himself to face the worst, and has equipped himself to face the hardest times. Should the new year bring these he is prepared to meet them, and anything better than this will be a boon the more welcome from its unexpectedness. We trust that when 1895 has gone over to the majority, and its records are to be written, that the unexpected may have frequently happened, and that our readers may each and all have enjoyed to the full the prosperity which we now have pleasure in wishing them.

TECHNICAL INSTRUCTION IN MANCHESTER.

THE fourth annual report of the Technical Instruction Committee of the City Council, states that the number of Corporation scholarships and exhibitions in force at the commencement of the session 1893-4 was 88—namely, 71 scholarships and 17 exhibitions. During the year 39 scholars and 10 exhibitioners have resigned or completed their courses. In the examinations for the award of new scholarships and exhibitions held in the first week of July, 82 eligible candidates presented themselves. There will be in force for the session 1894-5, 65 scholarships and 23 exhibitions. The Committee report that the general conduct, industry, and progress of the scholars and exhibitioners have been highly satisfactory. Nine applications have been received for grants in aid of technical instruction from the School Board and other authorities, some of them greatly exceeding the sums granted in the previous year. Having regard to the increasing demand upon their funds, necessitated by the growing needs of the Technical School and the School of Art and their branches, and especially bearing in mind the great responsibility entailed by the erection of the new Technical School and its efficient maintenance, the Committee could not recommend the Council to increase the grants in aid beyond the amount or the scope of the previous year. The grants made were £3,500. to the Manchester School Board, £1,000. to the Owens College, £250. to the Manchester Grammar School, £300. to the Lower Mosley Street Evening Classes, £1000. to Dob Lane Schools, Newton Heath; £100. to the Union of Lancashire and Cheshire Institutes, £150. to the School of Domestic Economy, £125. to the Recreative Evening Classes, and £50. to the Catholic Collegiate Institute—a total of £5,575. in all. The Committee "regret that they have been unable to make a beginning with the building for the new Technical School. Many difficulties have intervened to prevent progress. The quantities are, however, complete, and shortly advertisements will be issued inviting tenders. A satisfactory arrangement has been made with the Electric Light Sub-Committee for the supply of electric current in the new school." The Committee add that they have kept in mind the expression in the report of 1893, that "a more complete accord amongst the various institutions as to the courses of study, fees, and other arrangements would greatly assist the provision of efficient instruction readily accessible to all classes of the community in all subjects likely to promote the industrial and commercial prosperity of the district." They invited the co-operation of other authorities and institutions in the formation of a joint committee. This has been formed, and consists of the following representatives:—The Technical Instruction Committee (six), the School Board (six), the Owens College (three), the Manchester Grammar School (two), the Girls' High School (one), the Catholic Collegiate School (one), the Lower Mosley Street Evening Classes (one). The Committee has appointed Mr. Alderman Hoy chairman, and Dr. Ward deputy-chairman, and Mr. C. H. Wyatt and Mr. J. H. Reynolds joint honorary secretaries. The new premises, which form part of the Municipal Buildings in Openshaw, towards which the Committee contributed £1,500., are complete, and they will give accommodation for the classes that have hitherto been held in the rooms of the Manchester and Salford Equitable Co-operative

Society, at Openshaw. The total number of students enrolled at the Technical School for the session 1893-4 was 3,223, as compared with 3,354 for 1892-3. In the latter number, however, were included 256 art students transferred at the opening of the session to the School of Art. There was thus an actual nett increase in the present session of 125. The grant received from the Science and Art Department for the year 1892-3 was £1,182. 14s.

PHOSPHATES—THEIR PRODUCTION AND CONSUMPTION.

BY FRANCIS WYATT, PH. D.

VEGETABLES derive their food value from their starch, gluten, sugar, gum, and some organic acids, while the value of animal food is due to albumen, fibrine, fats, and small quantities of divers saline matters. All these constitute what are known as proximate principles, the ultimate composition of which is made up of such simple bodies as carbon, hydrogen, oxygen, nitrogen, calcium, potassium, sodium, iron, phosphorus, and sulphur. The elements of our food are, therefore, taken from the air, the water, and soil, and are so fitted together by the plants as to produce the food of those animals termed graminivorous, which, in their turn, afford to us the vast bulk of our animal sustenance. These mysterious inward processes and these marvellous transmutations of inorganic into organic products, through the medium of plants and animals, form the foundation of the phenomena connected with scientific agriculture, the nutrition of plants, and the increase and prosperity of populations. A practical and beautiful illustration of the contrast existing between the respective attributes of vegetables and animals has been furnished by Dumas and Cahours in the following manner:—

VEGETABLES.	
Produce	{ Nitrogenous matter Fatty matter Gum, sugar, starch.
Consume	{ Carbonic acid Water Ammonia.
Absorb oxygen, constitute apparatus of reduction and are stationary.	
MAN AND ANIMALS.	
Produce	{ Carbonic acid Water Ammonia.
Consume	{ Nitrogenous matter Fatty matters Gum, sugar, starch.
Absorb oxygen, constitute apparatus of oxidation and are locomotive.	

A progressive and eventually complete exhaustion of the soil is thus indicated, and we are naturally brought to realise the necessity for its reconstitution by the aid of chemistry, for the reason that while man and animals produce those very elements which are so necessary to the renewed existence of the plants, they both are locomotive and do not, in practice, give back to the earth what they have borrowed from its stores.

Some rough idea of the actual quantity of mineral matter annually withdrawn from the soil by our food plants may be arrived at if we take a given weight of any cereal—say, for instance, wheat—and burn it until it is reduced to a perfectly white ash. If we next weigh this ash very carefully we shall ascertain that its weight will represent about $2\frac{1}{4}$ per cent. of the material burned. In the same manner, if we burn a weighed sample of the straw of the grain, or, let us say, of hay or of clover, we shall find that the residual ash will represent about $6\frac{1}{2}$ per cent. of the original substance. A chemical analysis of the two kinds of ash, wheat and straw, will show that the first contains about 40 per cent. and the second about 8 per cent. of phosphoric acid, and with these figures as a basis, some interesting calculations may be made with approximate accuracy.

The total acreage under cultivation for cereals and grasses in the United States is estimated at 200,000,000 acres, and the total weight of the crops produced from it at 225,000,000 tons.

If the amount of mineral matter contained in this product be estimated at an average of, say, 4 per cent. on the gross—which, we think, would be fair—it gives a total of 9,200,000 tons. If the percentage of phosphoric acid in the ash of the grain and in that of the straws and grasses be taken for the purposes of our inquiry at the low average of, say, 20 per cent., the amount of this valuable material yearly abstracted from the soils by our food crops alone attains the gigantic total of at least 1,840,000 tons, or, say, 19 pounds per acre.

These are large figures, and it would be probably unfair to assume that the whole quantity is altogether lost to the soil. Certain allow-

ances must necessarily be made for farm refuse and for stable manure but even when these are reckoned with, it will probably be safe to place the actual loss of phosphoric acid at one million tons.

If the average depth of our arable soils in their virgin state be taken at only gin., and if we assume them to have contained, say, 0.10 per cent. of phosphoric acid, their original total was, say, 3,000 pounds per acre; in other words, a sufficient quantity to last for 150 years on the present basis of production.

We must, however, remember that immense bodies of our soil have long been under cultivation; that the science of agriculture is comparatively new; and that it is only within the past 50 years that any considerable attention has been bestowed upon the problem entailed by possible exhaustion. Very serious inroads have therefore already been made upon our reserves of this necessary plant food, and it is recognised that a large, if not the major portion of our older cultivated lands are already showing premonitory symptoms of impoverishment.

Of recent times the attention of many intelligent farmers has been very forcibly directed towards this important circumstance; they have been taught to realise that if production is to go on, the vital elements must be restored to the soil, and they are now using a number of substances known to contain phosphoric acid, for the purpose of making good the losses entailed by their business operations. The following are a few of the principal substances of this kind, the figures placed opposite to them being offered as broadly approximative and without claims to absolute accuracy:—

Name of Substance.	Average contents in phosphoric acid. Per cent.	Probable quantity used. Tons.
Guanos	25	50,000
Fish scrap	2	75,000
Tankage	9	150,000
Bones	24	250,000
Bone black	32	
Bone meal	30	
Superphosphate of lime	12	700,000
Refuse of various kinds from tanneries, glue factories, oil works, &c., &c.	3	300,000

It would appear from this data that the total quantity of phosphoric acid purchased in these various forms does not amount to more than one-fourth of the quantity we have reckoned as taken out of our soil, and either consumed in our cities or exported to feed the peoples of foreign countries every year. It follows that, without counting the considerable additional acreage yearly coming into the category of exhausted lands, there is an actual and active necessity for the use of at least four times our present consumption of phosphatic fertilizers.

In past and prehistoric ages vast quantities of phosphoric acid have been produced and redistributed over the globe's surface, and these have been stored up for us by nature in the form of phosphates in all sorts of places, more or less easily accessible. We have discovered these phosphates associated with the rocks of all eras and of various textures in veins, pockets and beds, and are now producing it in this country and in Canada, as well as in England, France, Germany, Belgium, Spain, Portugal, Norway, Russia, and the West Indies.

The character of the phosphates of lime thus far discovered in the United States is that of amorphous and nodular deposits which occur in the Tertiary formation, the strata of which may be broadly said to hug the coast of the Atlantic Ocean and the Gulf of Mexico from New Jersey to Texas, embracing within its area the most extensive marl beds in the world. Quarries or mines of more or less commercial value and importance have been located and worked in Virginia, North Carolina, Alabama, Georgia, and Florida, and there is no reason why phosphates should not be found in large quantities in states where they have only hitherto appeared to be of very low grade. For the present, however, the only sources that are being largely exploited are the vast beds of South Carolina and Florida, and, unless we are misled by appearances these seem sufficiently extensive, if wisely managed, to meet all our requirements for an indefinite period.

TANNING MATERIALS IN 1894.—*Mimosa Bark*: A quiet consumptive demand has been experienced for good shipments; prices, though fairly well maintained, have favoured buyers, present quotations being about £1. lower on Ground Adelaide and £2. lower on Portland since the beginning of the year. *Gambier*: The opening price for spot was £17. to £17. 10s., but some considerable speculative transactions about January and February gave an impetus to the market, and in the latter month £18. 10s. was reached. This advance, however, was not maintained; but in September a much more active business was transacted with again advancing prices; and to-day quotations are—spot £19. 5s., and for arrival £18. *Valonia*: The market showed weakness at the commencement. This continued until the autumn, when unfavourable reports of the new crop gave an impetus to prices.

PEOPLE'S PALACE DAY TECHNICAL SCHOOL.

AMONG the many branches of educational work carried on at the People's Palace in the Mile-end-road the day technical school has been one of the most successful. The annual distribution of prizes and certificates to the pupils took place recently in the Queen's-hall. Professor Alexander Kennedy, F.R.S., was the distributor, and Mr. W. Hales, Master of the Drapers' Company, presided. The head master, Mr. D. A. Law, read the annual report, which, he said, became year by year more and more satisfactory. The number of pupils now in the various classes was 454, compared with 420 during the previous session. Of these 205 held scholarships granted by the Drapers' Company, who have done so much to help the work of the People's Palace, and five scholarships were endowed by the London County Council. The object of the school was to prepare boys, by means of systematic instruction in science and the use of tools, for learning afterwards trades demanding special manual dexterity. The instruction given was not of a theoretical character only; the school workshops were among the best fitted shops in the country. The result of this training was shown in the fact that one of the pupils had gained a London County Council intermediate scholarship, through which he would secure still higher technical instruction for the next three years; and many of them passed first class in honours at the examinations of the Science and Art Department. Mr. Hales expressed the governors' satisfaction at the high state of efficiency in which they saw the school to be. They attributed it for the most part to the work done for it by the head master. Professor Kennedy said that, as one who had had much experience in the education of engineers, he wished also to add his testimony to the good work which the school had done. He had seen many drawings done by the pupils and much of their practical work, and he had been very much pleased with them. They showed him that the line taken in this school and the general course adopted was the one best suited to prepare lads for apprenticeship to the engineering trade. He considered it most important that the engineers of the future should not only be apprentices, but educated apprentices. Such work as this school was doing should, he thought, be encouraged by the great trade unions, whose *status* would be considerably raised if they insisted on the proper training of their future members.

THE ANALYSIS OF BAUXITE.

MIX and fuse five-tenths of a gramme of very finely powdered bauxite with 8 grammes of powdered bisulphate of potassium. The fusion should be made in a thin-walled platinum crucible of about 400 cubic centimetres capacity; the cover of the crucible should fit well.

During the first fifteen minutes the crucible should be on a platinum wire triangle over a small flame of a Bunsen burner. The burner flame should be protected from draughts by a sheet-iron chimney, and the flames at first should just touch the crucible bottom. At intervals of five minutes remove the cover carefully and give the contents of the crucible a rotating motion, holding the crucible firmly in the tongs. At the end of fifteen minutes turn up the flame till the lower quarter of the crucible is red hot; agitate frequently as before.

In ten minutes more turn up the flame full and heat for five minutes, with shaking, cool, add two grammes more of bisulphate of potassium, and gradually bring to a homogeneous fusion, but do not heat long enough to drive off the free sulphuric acid.

Pour out the liquid fusion into a warmed and dry platinum dish; the cake cools and does not adhere to the dish. Place together with the crucible and cover in a 200 cubic centimetre beaker. Add 150 cubic centimetres of water. Heat to 40° C with frequent stirring, until all soluble matter is dissolved.

Silica.—Filter into two 300 cubic centimetre beakers, and wash the residue. Ignite and weigh as silica. Make correction for silica if the bisulphate of potassium contained any. Also test the silica with hydrofluoric acid, and if any residue is found fuse it with a little bisulphate of potassium, dissolve in water, and add it to the main solution.

The filtrate from the silica contains the titanate acid, alumina, and oxide of iron.

Titanic Acid.—Add dilute nitric acid to slight precipitation, not cleared by stirring. Add dilute (1 to 3) sulphuric acid until this precipitate just redissolves. Add four drops of concentrated sulphuric acid to the solution and dilute to 250 cubic centimetres. Saturate with sulphurous acid gas. Heat slowly to boiling, and boil gently for three-quarters of an hour. Add a little strong sulphurous acid water occasionally to keep the iron in a ferrous state.

Filter through double filters and wash with hot water. Ignite and weigh titanic acid.

The filtrate is boiled until free from sulphurous acid; two cubic centimetres of concentrated hydrochloric acid and two cubic centimetres of concentrated nitric acid are added, and the solution boiled

for fifteen minutes to thoroughly oxidise the iron. It is then diluted to 250 cubic centimetres, with hot water and ammonia added in slight excess. Boil gently for five minutes and then warm for five minutes more. Long boiling gives a precipitate which retains potassium salts when washed. Filter and wash thoroughly with hot water. Wash the precipitates off the filters back into the beakers, dissolve in ten cubic centimetres concentrated hydrochloric acid and water, dilute to 250 cubic centimetres with hot water. Reprecipitate with ammonia as before. Filter on the same washed filters. Ignite (finally to highest heat of blast-lamp) and weigh as oxide of iron and alumina; fuse with carbonate of soda, boil out with water, filter, and dissolve residue in hydrochloric acid. Titrate iron with bichromate and obtain alumina by difference from total weight of oxides of iron and alumina, calculating the contained aluminium from the oxide.

SOME PATENT ARTIFICIAL FUELS.

THE Patent Office at Washington has at present a very curious assortment of contrivances patented for cheapening the cost of fuel. Some of the ideas are exceedingly interesting. One patent provides for using corn cobs soaked in petroleum, another would have people cut leaves and grass when green and press them into compact blocks. It is claimed for this particular patent that such blocks might be used for building and fencing without impairing their value as fuel. There are, besides, many devices for utilizing coal dust. One proposes to mix clay, molasses and water, coal dust, and petroleum. Another mixture is that of sawdust, Irish moss, asbestos fibre and burnt limestone, these being boiled and made into bricks with coal dust. Then there is a patent for bricks without coal dust, to be composed of ashes and sawdust saturated with petroleum and coated with resin. Among the most curious ingredients for artificial fuels are clam shells, charred garbage, corn meal, wheat flour, sugar, seaweed, broken glass, lard, tar, and leaves.

One of the most interesting of these contrivances is composed of powdered charcoal and finely cut cork. The fuel burns very slowly, and gives off a great deal of heat, being particularly well adapted for the sick room. Exclusive rights have been taken out for the manufacture of a brick or cartridge of highly porous clay, which is to be soaked in kerosene and put in the kitchen stove when wanted. It is only necessary to apply a match to this, and the fire is ready for cooking. None of these, however, are more ingenious or economical than a fuel which is reported to be in use at present in Egypt. In this case Egyptian mummies, chiefly those of cats, ibises, and other animals held sacred by the ancients, are employed.

THE DYERS' COMBINATION.

ON Monday a further step was taken in the direction of strengthening the combination in the dyeing trade. When the present organisation came into existence, it will be remembered the parties to the working agreement were the Yorkshire Piece Dyers' Association, Limited, the Operative Dyers' Association, and the Gasworkers' and General Labourers' Union. The combination had scarcely been formed when negotiations were opened with a further important section of the operatives—the stuff pressers. This section number in all, in the district covered by the combination, some 600, and are almost to a man enrolled in a close society, whose rules as to apprentices are analogous to those prevailing in the various Typographical Associations—that a specified number of journeymen shall be employed to each apprentice. This fact sufficiently indicates the strength of the Society, whilst the importance of their work can be gauged by the fact that no goods can be finished without their aid. At the outset it was understood that the Stuff Pressers would give moral support to the Combination, but during the past week a ballot has been taken on the question as to whether or not they should join that organisation. On Monday a protracted meeting of the Combination Wages Board was held at the Victoria Hotel, Bradford, Mr. Henry Sutcliffe, as usual, presiding. Representatives of the Stuff Pressers' Society were present, and at the conclusion of the meeting it was announced that the Society had decided to join by a majority of more than two-thirds. The minority, it is stated, had previously to the ballot agreed to be bound by the decision of the majority—so that the practical effect is that a further and most important section of the labour of the dyeing trade is in the control of the Combination. Whether the working agreement has as yet been signed, or in what respects it agrees with or differs from the one already in existence between the masters and the men, is unknown. The accession of strength, at a rough estimate, raises the number of workmen controlled by the syndicate to 7,000. The Combination masters, it has already been stated, number nine, and an equally rough estimate of their proportion of the turnover of the trade could not place it above 50 per cent. under normal conditions.—*Yorkshire Post*.

NITRATE, INDIGO, AND TALLOW IN 1894.

Sodium Nitrate.—In the first half of this year wide variations were experienced. The year opened with the value of due and arrived cargoes at 9s. per cwt. The statistical position was extremely favourable, whilst the prospects of a good consumption were so apparent that the course of prices was almost invariably upward, until in the middle of April 10s. 6d. per cwt. was paid for arrived cargoes and upwards of 11s. per cwt. on the spot in several of the Continental markets. Fears of a decreased consumption in May, as well as expectations of increased shipments owing to the termination of the combination of producers to restrict the supply, had an adverse influence, and, although stocks were very light, prices relapsed in June to 9s. to 9s. 3d. per cwt. In October prices fell away owing to prospects of larger supplies, and 8s. 7½d. to 8s. 10½d. per cwt. was accepted for off-coast and due. Refined quality has continued in very good demand, and has usually commanded 3d. to 4d. per cwt. over the price of ordinary quality. The actual deliveries for the whole year amount to 864,000 tons, of which the Continent took 749,500 tons and the United Kingdom 114,500 tons. This represents an increase of 9½ per cent. on the Continent and 14½ per cent. in the United Kingdom as compared with 1893. The consumption in the United States remains remarkably stationary at about 100,000 tons.

Indigo.—The review of the indigo market for the past year is not a satisfactory one; prices declined all through the 12 months, and leave off at a lower scale of values than can be found during the course of the last 50 years, or, at any rate, since the panic of 1847. Good middling Bengal indigo is now selling in Calcutta at 240 rupees, and which, at the present rate of exchange, is equivalent to 4s. per lb. to a buyer, whereas the average value in London for the same quality during the past 20 years was 5s. 8d. per lb. This depreciation is attributed to the large supply which is coming forward, chiefly from Behar; but with the same total supply in 1885, the value of good middling Bengal was over 6s. per lb., and the rate of exchange was 1s. 8d. per rupee against 1s. 1d. now. About 1,000 chests have been sold here to arrive on the boiling samples for planters' account; this is a new feature. Though the supply from Madras is reported the same as that of last year, yet the bulk of the shipments of the new crop has so far gone to Suez for local consumption. Manufacturers are keeping back supplies, because prices now ruling for ordinary kinds in Madras are not sufficiently tempting to forward any quantity to the market. The consumption of East India indigo in Europe during the past year was 37,650, against 30,500 chests last year and 30,000 in 1892. The stocks on the Continent are less than they were a year ago, being estimated at 9,800 chests, against 11,000 last year.

Tallow.—The market was moderately active throughout the year. Even at times when comparatively small quantities were selling under the hammer, transactions were taking place on c.i.f. terms at prices about equivalent to those current here on the spot. The home supply was not very plentiful at any time during the year, but the imports of foreign and colonial tallow exceeded those of any previous year. By far the largest source of supply was Australia, some 43,000 tons having arrived thence, while the total import amounted to about 56,000 tons. Rather more than half of the tallow imported has gone to the home trade, and about 24,000 tons have been exported. The course of prices during the year was almost continuously downward. Starting at 29s. 6d. and 27s. 6d. for fine mutton and beef tallow, by the first week in August prices had fallen to 25s. and 23s. respectively. A reaction then occurred, and by the end of the month an advance of 2s. per cwt. had taken place. Values have since slowly given way again, until at the close of the year they were at about the level reached at the beginning of August, showing a fall of 15 per cent. from the price at the beginning of the year.

NOTES ON AMERICAN TURPENTINE.

By J. H. LONG.

IT is well known that the chief difference between the so-called French and American turpentines is found in their behaviour toward polarised light, the French oil being *levo*-rotatory, while that produced here has always been described as *dextro*-rotatory.

In the course of the examination of a large number of samples distilled in the laboratory from fresh crude turpentine sent me directly, I found that some disclosed a very low rotation, and a few were even *levo*-rotatory. Through the courtesy of Mr. E. B. Martin, of Louisville, I was supplied with crude "gum" collected in small amounts from single trees, and from the tests of these samples it appeared that the *levo*-rotation was found only in the product from the so-called spruce trees, sparingly represented in the lower turpentine-producing region. As this spruce pine (*P. glabra*) is not considered important from the standpoint of the industry I found difficulty in securing material enough for satisfactory investigation. However, in April of this year six samples of the dip

or crude liquid exudation, collected near Mobile, from as many different trees, were sent me, and from these I distilled the oils used in the tests below.

In odour, colour, specific gravity, and boiling-point these oils showed no unusual features, the average specific gravity at 20° being 0.862. When examined by the polarimeter, using the 200 mm. tube, I found the "observed angle of rotation," α , as follows:

No. 1	α	.....	-64.750°
" 2	"	.....	-69.075°
" 3	"	.....	-64.541°
" 4	"	.....	-63.100°
" 5	"	.....	-63.333°
" 6	"	.....	-70.333°

The *levo*-rotation is in all cases very marked, the specific rotation in the last amounting to

$$[\alpha]_D = \dots\dots\dots -40.79^\circ$$

It is also interesting to note that the results are close for the six samples, but as the trees yielding them grew in the same orchard, and, therefore, under practically the same conditions, and as the samples were taken at nearly the same time, this agreement should not be unexpected. It may be recalled that the *levo*-rotation of the French oil has usually been found much more uniform than the rotation of the American oil.

These observations seem to show the probable correctness of my former suggestion, viz., that the negative rotation sometimes found in American oil may be due to the presence of products from spruce trees. This appears all the more probable when it is remembered that in numerous oils examined, known to be free from spruce, a marked positive rotation was always noted, while a low positive rotation was found only in those oils distilled in parts of the country where the spruce is occasionally found.

In the further study of these oils I mixed distillates 1 and 3 above and re-distilled fractionally. The fractions were polarised as before with the following results:

Temperature.	α_D in 200 mm. tube.
156° to 156.7.....	-69.133°
156.7 " 157.2.....	-67.683°
157.2 " 157.6.....	-65.930°
157.6 " 159.4.....	-63.200°
159.4 " 162.7.....	-57.883°

A mixture of 2 and 6 gave:

Temperature.	α_D in 200 mm. tube
156° to 156.2.....	-73.350°
156.2 " 156.7.....	-72.416°
156.7 " 157.2.....	-71.066°
157.2 " 158.7.....	-68.065°
158.7 " 162.7.....	-65.160°

These results confirm those obtained from other oils, showing that the absolute amount of rotation is decreased in the higher fractions.

It was stated by Berthelot that the *dextro*-rotary American oil, when heated in sealed tubes to above 250°, is transformed into a substance with higher boiling-point and negative rotation. To test this behaviour in the present case I heated a portion of the first fraction from 1 and 2 to a temperature of 280° during two hours in a sealed glass-tube. On cooling it was polarised without redistillation, and showed in the 200 mm. tube

$$\alpha_D = \dots\dots\dots -15.33^\circ.$$

The product was then sealed and heated again to 300° through several hours. On cooling, it was found to be yellowish and somewhat viscid; on distillation the liquid was found to have a much higher boiling-point than the original turpentine, but little passing over below 170°.

Three-fourths of the product distilled between this point and 250°, and this portion gave in the same tube

$$\alpha_D = \dots\dots\dots -19.560^\circ.$$

A fraction of the distilled liquid collected from 175°—180° was strongly *levo*-rotatory also.

The residue was very dark and became thick and resinous on exposure to air. The distilled liquid had a marked odour of oil of lemons, and this with its rotation suggest that it must be identical with the product described by Berthelot as *iso*-terebenthene, which may be obtained also from the *levo*-rotatory French oil. While the ordinary product of long heating of turpentine-oil seems to be inactive dipentene, we have here a very stable active product which is probably mainly *levo*-limonene.

REPORTED FIRE AT PETROLEUM REFINERY.—A telegram was published in Berlin on Monday, stating that the great petroleum refinery of Messrs. Rychlovski and Sajet, at Batoum, has been completely burned down. The losses are said to be enormous.

COMPARATIVE VALUE OF CHROMIUM FLUORIDE AND BICHROME AS A MORDANT FOR WOOL.

BY way of supplement to our recent reference to fluoride of chromium as a mordant for wool, we have thought it desirable to record the experiments which have been made to determine the comparative values of the familiar bichrome and this newer mordant. Fluoride of chrome, as it is called commercially, has been found to yield excellent results when dyed properly in conjunction with dye-woods.

Experiments recently made at the Imperial School of Dyeing at Crefeld were pronounced very satisfactory, and logwood in particular produced with this mordant splendid shades of black, distinguished by their great fastness to light and air. Instead of the usual green tone obtained with bichromate, the black obtained with fluoride of chrome retained the blue-black cast.

For dyeing piece goods, the following method is to be recommended:—Boil $1\frac{1}{2}$ hours with $3\frac{1}{2}$ kilos. fluoride of chrome and 2% tartar per 100 kilos. material and a little fustic extract according to pattern, then rinse and dye with logwood until the required shade is obtained. Fluoride of chrome can also be employed without the tartar, and for blue tones boil with 3 kilos. fluoride of chrome and $\frac{1}{2}$ kilo. sulphuric acid per 100 kilos. material. No guarantee can be given for these recipes, as the percentages would, of course, vary according to the shade required. They are, however, useful as affording a basis for the experimental use of this mordant.

Fluoride of chrome, which hitherto was principally employed for a few articles, has now been brought into general use through a new process—patented by Messrs. Rudolph Koepp and Co., Oestrich-in-Rheingau, Germany—thereby rendering it possible in all cases to employ fluoride of chrome for mordanting wool, instead of the old chrome mordants. The English agents are Messrs. R. W. Greeff and Co., 3, Eastcheap, London, E.C.

Before we proceed to explain this method, we would like to make a few remarks about the mordanting of wool in general and this mordant in particular.

Fluoride of chrome is known to be a combination of hydrated fluoric acid with hydro-oxide of chrome, and is—with the chromium salts hitherto employed—the only combination which, next to the chromate of potash and tartar, or the chromate of potash and sulphuric acid method, can be utilised for mordanting woollen fibres.

The general method previously adopted for mordanting wool is boiling with

3% chromate of potash, 2% tartar,
or that lately and more extensively adopted method with
3% chromate of potash and
 $1\frac{1}{4}$ % oxalic acid.

With this method the chromate of potash, by constant boiling—on the one side through the lessened action of the tartar, and on the other through the reducing action of the wool—is reduced to hydro-oxide of chrome, which combines with the woollen fibres.

We can observe the process in the mordanting baths ourselves. The wool is first dyed yellow, and through continual boiling the colour changes slowly to green—i.e., yellowish green—and attains the greenest shade if the wool is left overnight, which is almost generally the case with loose wool.

The second method of mordanting is boiling out with

3% chromate of potash, and
1% sulphuric acid 66° Bè.

This method, which particularly in England is still extensively employed—albeit cheaper than the former—gives place to the latter as regards excellence.

With this method hydrated oxide of chrome, chromated oxide of chrome, and free chromic acid are formed, which combinations, although not affecting the dyeing with logwood, are, if possible, to be avoided when mordanting Alizarine dyestuffs.

Whereas both the former methods require the co-operation of the wool for reducing the chromate of potash, and therefore only produce the favourite green of the dyers (hydro-oxide of chrome), with this mordant by constantly boiling the wool, the green hydro-oxide of chrome is at once available in the combination in mordanting with fluoride of chrome.

In boiling the wool with fluoride of chrome, with the addition of a little oxalic acid, the even hydro-oxide of chrome combination in every case separates without causing the wool to become oxidised.

In this instance boiling one hour with
3% fluoride of chrome, and 1% oxalic acid
suffices (even a shorter time with light colours) in order to obtain the desired green tone on the wool, which, after being rinsed, can be dyed directly. The circumstance that the wool can be dyed immediately on coming out of the mordanting bath, or placed aside for a considerable

time, manifests its advantages, particularly with light alizarine dye stuffs, as the colours mordanted with fluoride of chrome invariably turn out more evenly than those treated with chromate of potash and tartar.

By mordanting with chromate of potash and tartar and with chromate of potash and sulphuric acid in further increased quantity, the wool possesses besides hydrated oxide of chrome also free chromic acid. I wool so treated is insufficiently protected from light, the chromic acid gradually disappears in places and gives rise to dull and uneven colours. That the wool retains its original softness through being mordanted with fluoride of chrome is shown by the above-mentioned statement because in this case an oxidization of the wool is impossible as is not with chromate of potash. In explanation of this, we refer to an extract from the Report on the Austrian Woollen and Linen Industry 1894, in which it is stated that the Alsatian and Saxon dyers of cotton goods, who are naturally obliged to treat their material most sparingly partly mordant with fluoride of chrome.

Attention is drawn to one thing which becomes apparent in mordanting with fluoride of chrome, i.e., the mordanting proceeds more favourably in the exhausted than in the new baths; not that the mordanting turns out different with the first operation as with the second, but that in mordanting a little oxalic acid is also added, and whenever calcareous water is employed the oxalate of lime separate on the primary mordanting, and the colour afterwards becomes rusty.

This transpires in all cases when chromate of potash and oxalic acid are first used for mordanting.

The dye-bath is then best preserved and is augmented—according to whether light or dark shades are to be mordanted—with
 $1\frac{1}{2}$ to 2% fluoride of chrome, and
 $\frac{1}{4}$ to $\frac{3}{4}$ % oxalic acid.

The only drawback which appeared in mordanting with fluoride of chrome was the corrosion of the copper vessels through the liberated fluoric acid, and thereupon the above-mentioned improvement was resorted to. It was proved that a few zinc bands affixed to the copper vessels completely protected the dye-baths. This results from an electrolytical action by which the fluoric acid does not affect copper while the zinc is present.

For this purpose two zinc-plated bands running diagonally from one end to the other—representing in width one-twentieth part of the diameter of the vessel—were soldered vertically.

The wool previously mordanted with fluoride of chrome—generally speaking—remains the same in dyeing alizarine colours as when mordanted with chromate of potash and tartar, and offered material advantages in many respects.

This is specially the case with Bayer's alizarine cyanines and anthracene blue of the Badische Anilin und Soda Fabrik. These can possibly also be dyed upon wool mordanted with chromate of potash and tartar, except that the shades obtained upon wool treated with fluoride of chrome are fuller and possess a more beautiful greenish blue lustre.

A further use is found in fluoride of chrome for fixing the already dyed colours by the so-called "after-chroming method."

Various dye-stuffs such as Cassella's diamine fast reds, anthracene yellow, anthracite black, are fixed with fluoride of chrome after they are dyed, so that the colours hereby acquire a particular fastness to soap; the same thing happens with the previous brands of clot red, and likewise the after-chroming with fluoride of chrome is recommended for many other dyestuffs, Victoria violet (Meister Lucius, and Brüning), fast blue (Kalle), for increasing their resistance to soap. In like manner is this also the case with indigo colour, i.e., the same advantages are offered over chromate of potash and tartar.

Should, for instance, indigo colours be used for producing forest green with chromate of potash and topped with fustic the indigo base, as is known, suffers considerable harm by the oxidising action of chromate of potash, whereas if mordanted with fluoride of chrome even the lightest indigo colours can be chrome without injury. There is a difference between the two mordanting processes as in one respect, apart from the mordanting—an oxidising action is also exercised on the woollen fibres or the dyed colour whereas in the second case with fluoride of chrome an actual separation of the hydrated oxide of chrome as mordant takes place.

These advantages undoubtedly make amends for the somewhat higher prices of fluoride of chrome, and the infinitesimal difference between the cost of mordanting as compared with the superiority of the colours obtained gives a distinct advantage to fluoride chrome.

PATENTS IN 1894.—The past year has been a busy one at the Patent Office. The actual number of patents filed was 25,372, thus beating the record. In 1893—which likewise excelled previous years—the number reached on December 31 was 25,102. The class of inventions in which the greatest activity prevailed related to the cyclists' trade. Considerable enterprise is observable also in electrical inventions, more particularly those dealing with lighting by electricity.

Correspondence.

* We do not hold ourselves responsible for the opinions expressed by our correspondents.

THE COMPARATIVE WORKING OF COKE OVENS.

(To the Editor of the Chemical Trade Journal.)

SIR,—I wished to point out in reference to my communication which you published in your issue of the 22nd ult. that, as there is only one installation of Semet-Solvay ovens in Westphalia, viz., at Ruhrort. Mr. Farrell in referring to Semet-Solvay ovens working on Westphalian coal must have meant those at Ruhrort. I stated that at Ruhrort they were working a mixture containing 21 to 22 % of volatile matter, and Mr. Farrell had compared these ovens with other systems working ordinary Westphalian coal containing as much as 29 per cent. of volatile matter. This is obviously unfair to the Semet-Solvay ovens, but since my former letter I have received a letter from the Phoenix Company of Ruhrort stating that the percentage of volatile matter in their mixture is only about 18%. Therefore the comparison given is more unfair than I at first supposed.

I should not have raised this point again but that you state in a note to my communication that it is only fair to Mr. Farrell to point out that "the comparison was made working on similar grades of Westphalian coal." In this he must have been mistaken.—Yours, &c.,

Brynbo, Jan. 1, 1895.

JOHN H. DARBY.

EXORTS OF PETROLEUM FROM U.S.A.

THE Chief of the Bureau of Statistics, Washington, gives the following returns of the exports of petroleum and petroleum products for November, 1894. The total shipments were 76,955,416 gallons, compared with 78,253,351 gallons in November, 1893. The total for the eleven months ending November 30, 1894, was 811,802,039 gallons, against 802,479,482 gallons during the same period in 1893. The details of the shipments are as follows:—

CRUDE PETROLEUM.			Gallons.
Total November, 1894	..	..	11,925,791
" " 1893	..	..	9,157,656
NAPHTHAS.			
Total November, 1894	..	..	2,231,689
" " 1893	..	..	2,480,933
ILLUMINATING.			
Total November, 1894	..	..	59,370,836
" " 1893	..	..	62,713,462
LUBRICATING AND PARAFFIN.			
Total November, 1894	..	..	3,425,672
" " 1893	..	..	3,898,024
RESIDUUM.			
Total November, 1894	..	..	1,428
" " 1893	..	..	3,276

Trade Notes.

THE SALFORD SEWAGE EXPERIMENTS.—At the last meeting of the Salford Town Council, Mr. Snape inquired when they were likely to have a report on the experiments of the sewage works at Mode Wheel, which had been going on for the past three or four years at great cost to the Corporation? Mr. Groves, deputy-chairman of the committee which has control of the experiments, stated that the report would be issued as soon as possible. The experiments were not carried on at great cost to the Corporation, as Mr. Snape suggested. In most cases, the experiments were conducted at very small cost to the Corporation.

THE GERMAN CUSTOMS TARIFF BILL.—The Bill prepared by the Government for amending the Customs Tariff of Germany raises the duty on ether from 20 to 125, and to 180 for certain descriptions. Sulphuric ether remains, however, at 20. The duty on cocoa-butter is placed on the same level as cocoa oil, viz., 45, while that on cotton-seed oil will be raised to 10 marks. On the other hand, the duty on sophisticated cotton-seed oil is to be reduced from 4 to 3'50 marks. The duty on perfumes is to be increased to 100, the exemption granted on spirit intended for the manufacture of perfumes having proved to be prejudicial, as much of it is suitable for drinking purposes.

THE MIDDLESBROUGH CHEMICAL TRADE.—The export of salt has largely increased to India during 1894, and a new market has been found in New Zealand, to which large quantities have been shipped. The total exported to December 22 was 1,856,718 tons, and chemicals 11,832 tons. The value of the South Durham and Cleveland saltfield has caused inquiries to be made by those engaged in the chemical trade of the possibility of establishing works on Teeside, and the solution of a difficult problem in the trade has brought near the erection of chemical works within the salt area. A company was promoted to work an electrical process "in the vicinity of the coal and the salt fields of the North of England," with a capital of £200,000, but no step has yet been taken. Prices have been fairly remunerative.

THE POLLUTION OF THE RIVER BOLLIN.—The Prestbury Parish Council are at once taking active steps, so far as they are concerned, to prevent the pollution of the River Bollin. At the first meeting of the Parish Council, on Tuesday last week, at Prestbury School, Mr. J. F. May was appointed chairman and the Rev. R. E. Broughton (the vicar) vice-chairman. It was resolved—"That the Rural District Council be requested to make application to the Local Government Board to compel the Macclesfield Corporation to provide for the sewage of Prestbury in their scheme of sewage." The River Bollin runs through Prestbury, and it was on account of its pollution that the Rev. Canon Wilson (then vicar of Prestbury) first took proceedings against the Macclesfield Corporation, the Mersey and Irwell Joint Committee subsequently taking proceedings to compel them to provide a main drainage scheme for Macclesfield.

EXPLOSION OF A "WELLS" LAMP.—An inquiry was held at the London Hospital, on the 27th ult., on the body Henry Walworth Sifton, aged 29 years, an engineer, late in the employ of Messrs. Clarke, Nickolls, and Coombs, wholesale confectioners, of Hackney-wick, who was fatally injured on Thursday last by the explosion of a large "Wells flare light," used in an open space at the factory. Two other men were injured at the same time. James Graham, yardman at the factory, stated that the lamp was lighted up on Thursday afternoon. He called the attention of the chief engineer to the fact that it was flaming higher than usual and was emitting a roaring noise. The oil ran down outside the reservoir and caught fire, and witness got out the hose, but the chief engineer stopped him from using it and told him to send for some sand. He went away to get it, and had hardly been gone a moment when the explosion occurred. The coroner adjourned the inquiry in order that an official from the London County Council, or someone connected with the Explosives or Factory Acts, might attend.

THE FALL IN BEET SUGAR.—At the opening of 1894 the price of 88 per cent. beetroot was 12s. 6d. It then followed an uncertain course between 12s. 4½d. and 13s. 1½d., but in April receded to 11s. 3d. Shortly before the commencement of the latter half of the year reports began to circulate concerning the probabilities connected with the American Tariff Bill, and from that time onward to its final passing in August last every conceivable opinion was hazarded as to the result of the discussion. According as these opinions tended so did values fluctuate. In June prices ranged from 11s. 7½d. to 12s. 9d. For July and the greater part of August 11s. 10½d. was the highest and 11s. 3d. the lowest point; but towards the end of the latter month a "squeeze" occurred, and "bear" sellers, who had too long left their accounts uncovered, were obliged to pay up to 12s. 9d. By this time the beetroot crop had made considerable progress towards maturity, and the communications received concerning it leaving little doubt as to its importance, values steadily declined, and at the close 8s. 7½d. is about the value. This last figure is 1s. 1½d. per cwt. under the lowest depth reached in 1884.

THE YIELD OF SUGAR-BEETS.—The yield of sugar from an acre of beetroot varies considerably in different countries, and in different seasons. Thus the yield both from the roots, and the sugar made from them, is far less in France than it is in Germany. The *Journal des Fabricants de Sucre* gives the average general yield of roots as 34,000 to 35,000 kilos. per hectare in Germany, while the French yield only averages 25,000 kilos. This is about equal to a crop in roots of 14 tons per acre in Germany, as compared with only 10 tons in France. The German root is also richer, and more is extracted from it, as it gives an average of 12'4 per cent., while France only extracts 10'4 per cent.; this means that while from an acre of beet France gets on an average 10 cwt. of sugar, Germany gets more than 16 cwt. The consumption of sugar upon the Continent of Europe, with a population of about 290,000,000 (excluding Turkey), is under 2,000,000 tons, while that for the United Kingdom, with a population of only 39,000,000, was in 1893, 1,300,000 tons. If the rate of consumption upon the Continent of Europe were the same as in Great Britain, the quantity would be 7,500,000 tons, or nearly four times the amount it is now. The rate of consumption would seem to depend mainly upon price; for it is a fact that, at the present time, the price of German and French sugars in German and French shops is double and treble what it is, for the same goods in England.

DESTRUCTIVE FIRE AT A FUEL WORKS.—A serious fire occurred on Tuesday night at the Graigola Fuel Works, Strand, Swansea. The old portion of the works was practically destroyed and a large quantity of new machinery was damaged.

SOCIETY OF CHEMICAL INDUSTRY: London Section.—The next meeting of this section will be held on Monday, 7th inst., at Burlington House, when a paper will be read by Dr. Attfield on "Investigations of the Natural Solidified Sodium Sulphate Lakes of Wyoming, U.S.A."

SOCIETY OF CHEMICAL INDUSTRY: Manchester Section.—A meeting of this section was held yesterday at the Victoria Hotel, Manchester, when a paper was read by R. Le Neve Foster, Esq., on "The Prevention of Smoke Arising from the Intermittent Firing in the Various Processes of Chemical and Allied Industries." Mr. R. J. Flintoff also read a paper on the "Formation of Magenta in Developing Aniline Black on Cotton."

MR. COMMISSIONER KERR AND LAW COSTS.—At the City of London Court, on Monday, a debtor named Paterson was to have appeared on a judgment summons before Mr. Commissioner Kerr. Plaintiff was in attendance, and stated that the defendant had been at his office that morning and offered to pay £2. monthly. The Commissioner: And if he had been here I should have made an order of £1 only. Why did you sue him first in the High Court? It only meant that the poor man would have to pay much greater expenses. The plaintiff explained that he took his solicitor's advice. The Commissioner: Of course. They want their pound of flesh. Have you ever been sued in the High Court? Plaintiff: No. The Commissioner: Then I hope you will be soon. Then you will know what it is to pay law costs and lawyer's bills. You have run this debtor into heavy expenses by going to the High Court.

AMERICAN COPPER DEPOSITING CO., LD.—The second annual meeting of Elmore's American and Canadian Patent Copper Depositing Co. (Limited) was held on Monday at Cannon-street Hotel, London. Mr. J. J. Atkinson, who presided, said the board would have been very glad indeed had they been in a position to announce to the shareholders the sale of their property, but there was no chance of their obtaining an offer for it until they were in a position to show beyond all question the commercial value of the patents. Their friends in America were absolutely satisfied in regard to the merits of the process on every point except that of the cost of production, and although upon this point the board could furnish them with expert testimony of the highest authority—including the testimony of Dr. John Hopkins and Sir Frederick Eramwell, who put the cost at an amount not exceeding a penny a pound—yet they were met with the natural rejoinder from their American friends, "How is it, then, that the English companies cannot produce at that price?" Therefore, until the European companies could show a substantial profit from the working of the patents, they were not in a position to insist upon a proper purchase price for their rights. Consequently their prospects were largely dependent upon the success of the European companies. The business these companies were doing tended to satisfy the board that presently they would be able to fix a reasonable price for their patents, and either dispose of them *en bloc* or by licence upon terms that would be satisfactory to the shareholders. The company was being carried on at a very trifling expense. All the directors held a large number of shares, and no effort would be wanting on their part to do everything they possibly could to make the undertaking a success at an early date. He then moved the adoption of the report, which was seconded by Mr. J. A. Ewen, and, after a short discussion, agreed to.

Market Reports.

MISCELLANEOUS CHEMICAL MARKET.

In the alkali market the demand generally is good, the sales for export account being fairly brisk for all kinds of alkali. Spot quotations on caustic soda are again slightly in buyers' favour, and current quotations may be taken as follows:—*f.o.b.* Tyne, 77%; *l.o.*; *f.o.b.* Liverpool, 74%; 70%, £8.; 60%, £7. per ton, 10-ton lots and upwards. Alkali, 58%, is maintained at recent advance: £3. 7s. 6d. per ton being the price in bags at makers' works, and £3. 17s. 6d. to £4. in casks, *f.o.b.* Leblanc soda ash, ordinary, 1d. per degree, *f.o.b.* Soda crystals still ruling at low rates. Bleaching powder, £7. 5s. per ton, *f.o.r.* makers' works, and £7. 7s. 6d. to £7. 10s., *f.o.b.* Chlorate of potash does not improve, and price is weak: 5½d. per lb. is to-day's full value. Nitrate of soda quiet at 8s. 10½d. Sulphate of copper firmer, and price has advanced: £15 5s. to £15 10s., *f.o.b.*, is to-day's quotation. Litharge continues flat, with little inquiry. Sugar of lead (foreign) £24. *c.i.f.* Nitrate, £18. 10s. Acetates generally remain unaltered: lime, brown, is dull at £6., and grey at

£10. per ton; soda, £15. 10s., *c.i.f.* White powdered arsenic find a ready outlet at £14. 10s., *ex store*. Bichromates in fairly steady request, and without change in price. Prussiate of potash firm at 10½d. per lb.; scale, 9½d. Oxalic acid quiet at 3½d. Carbolic acid, crude, is again stronger, and as supplies are scarce, better prices are likely to rule shortly: 1s. 9d. for 60's is generally quoted to-day crystals, 39/40%, still flat at 5½d. per lb.

TAR AND AMMONIA PRODUCTS.

Benzol continues very dull, both 90's and 50/90's being obtainable at 1s. 0½d. Carbolic acid is, if anything, a shade firmer: crude 60%, has been selling at 1s. 7½d., and 1s. 8d. asked; crystals, 40% are also a fraction dearer at 5d. to 5½d. Crude naphtha is the cheapest at 5d., but solvent is firmer at 1s. 2½d. to 1s. 3d. Creosot and anthracene are virtually unaltered. Pitch is easier in price at 37s. prompt, *f.o.b.* East Coast; forward, 34s.

Sulphate of ammonia is without material change from last week as regards position. Prices are now quoted £11. at Beckton, and £10. 17s. 6d. other ports, but it is difficult to learn the amount of actual first-hand business that has taken place at these prices. At Limerick £10. 18s. 9d. is certainly nearer the actual value. The position at present is an interesting, though difficult, one.

LIVERPOOL MINERAL MARKET.

Our market has continued to rule very quiet, chiefly owing to the prevailing holidays interfering with the usual run of business. Manganese has been very steady; sales have been made without any improved figure, but the new year holders have announced higher prices, which, if the imports are moderately controlled, they would be able to realize. Manganiferous ore is unaltered at 16s. to 17s. 6d. per ton, *c.i.f.*, in cargoes. Bauxite, Irish Hill Brand, is in increased demand, and prices continue firm, with the probability of an advance. Chrome ore: arrivals continue very slow, being insufficient to meet the immediate demand, and therefore prices are firm at 65s. to 70s. for 40% and 110s. to 115s. for 50% ore, but even these prices have not encouraged any particular increase in the shipments. French chalk: arrivals are small, and consist mostly of "Angel White" qualities; prices are firm at 75s. to 110s. per ton. Barytes, bit carbonate and sulphate, continue scarce, particularly the former of better quality, whilst sulphate is in good demand and high class brings good figures. Wolfram and scheelite are unaltered. Ferro tungstite is unchanged at 1s. 9d. to 2s. per lb. Strontia sulphate (Celestine) continues steady. Plumbago, for foundry purposes, £5. to £6. per ton; better qualities, £8. to £10. per ton. Bog ore steady at 22s. to 23s. Ochre, "J.C.," 60s. to 65s.; other brands according to quality; Devonshire, Welsh, etc., 50s. to £10. Fullers earth ground, a fair business is doing at 80s. to 100s.; lump, 60s. to 70s. Arsenic continues scarce at £15 to £16. Irish moss is steady.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—The holidays have caused a lull in Palm oil, which keeps very quiet, and sales are few if any. Olive is in moderate demand at good prices, values ranging from £29. to £38. per ton according to quality. Linseed is dull, possibly owing to the firmer tendency of prices, which are 21s. to 21s. 6d. per cwt. for Liverpool makes in export casks. Cottonseed is on the whole steady, Liverpool refined is quoted at 18s. 3d. to 19s.; American, however, is cheaper at 19s. per cwt. Castor oil is nominally unaltered, but there is very little doing, good seconds Calcutta is quoted 2½d. per lb. First pressure French 2½d. to 2¾d. per lb. Tallow is in but small demand, though the prices are well maintained. Resin is easier, but the prices favour buyers. Business is quiet, common is quoted 3s. 10½d., medium 4s. 6d. to 6s. 6d., and fine 7s. 6d. per cwt. Spirits of turpentine are steady with a moderate inquiry at the lower values, American being quoted 20s. 6d., and Mexican in cases 19s. 6d. per cwt. Petroleum is dearer at 4½d. to 5½d. for American according to quality, and 4d. per gallon for Russian refined.

COLOURS are steady, without alteration in prices. Ochres: Oxfordshire, common, £10., medium, £12., best, £15. Derbyshire, common, 40s.; medium, 50s., best, 60s.; Welsh, best 90s., seconds, 50s., and common, 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Umber Turkish quiet; Devonshire, 50s. to 55s. White lead, £16. Red lead unchanged. Venetian red, £6. to £10. Cobalt: Prepared oxide 9s. 9d.; black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2, 2s. 6d. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide, £22. 10s. to £25.

TYNE CHEMICAL REPORT.

TUESDAY.

Chemicals are still dull, but with the majority of works being closed, stocks are being rapidly reduced, and there is likely to be a scarcity ere long. Sulphur £4. per ton. High strength caustic £10 per ton for 76/77%. Black, £7. 5s. per ton. Soda crystals are very scarce at £1. 16s. 6d. to £1. 17s. 6d. per ton gross weight.

Bleaching Powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, nett; caustic soda, 76/77%, £10. per ton, nett; do., 70%, £8. 5s. per ton, nett; recovered sulphur, 2 cwt. bags, £4. per ton, nett. Soda ash, 48%, £3. 15s. per ton, nett; do., 52%, £4. 2s. 6d. per ton, nett; do., 56%, £4. 10s. per ton, nett; alkali, 36%, £2. 15s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. 15s. per ton, nett; do., 52%, £5. 5s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £5. per ton, nett; do., 1 cwt. kegs, £5. 10s. per ton, nett; silicate of soda, 75° Tw., £2. 17s. 6d. per ton, nett; do., 100° Tw., £3. 12s. 6d. per ton, nett; do., 140° Tw., £4. per ton, nett; soda crystals, casks, £1. 16s. 6d. per ton, nett, gross weight; do., 2 cwt. bags, £1. 16s. 6d. per ton, nett; chlorate of potash, 5¼d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £4. 2s. 6d. per ton, nett; blanc fixe, £7. 10s. per ton, nett; chloride of barium, £7. 10s. per ton, nett; carbonate of alumina, £28. 15s. per ton, nett; aluminate of soda, £33. 15s. per ton, nett; in 5 ton lots, £28. 10s. per ton, nett.

SALT.—South Durham salt unaltered at 9s. to 9s. 6d. per ton, f.o.b. Tees. Block salt firm at 15s. per ton.

COALS.—At present business is very limited, and prices for the moment are practically unaltered. Best Northumbrian steam, 9s. 3d. to 9s. 6d. per ton; second qualities do., 8s. 3d. to 8s. 6d. per ton; small steam, 3s. 9d. to 4s. per ton; gas coals, 7s. 3d. to 8s. per ton; coke steady, 13s. to 14s. per ton. Manufacturing coals dull, many factories being idle. Bunker coals depressed, and very little demand at the moment.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, WEDNESDAY.

According to Scotch custom, when New Year's day, as in this case, falls very early in the week, a good many of the works closed down on Saturday for three or four days of holiday-making, and to-day only those pressed with orders are as yet resumed. These, this time, are a small category in the chemical manufacture, as well as in the other industries, and normal activity will not be reached till the beginning of next week. By Saturday last there was no improvement in the market for chemicals, but rather an increased weakness, and sellers' views of prices for actual business may be said to be about the lowest. After the holidays it is believed that there will be some signs of a slightly firmer market. Sulphate of ammonia is in a very low state, with almost nothing on report as being carried through. Still, most sellers are firm at £11. spot, although one or two hard-up makers may take less under the rose.

Mineral oils are in very large delivery, ex contracts, and some makers are in arrears with customers.

Chief prices current are:—Soda crystals, 35s. nett, Tyne; soda ash, 48/52°, £3. 17s. 6d. to £4. 5s. nett, Tyne; white alkali, 48/52°, £4. 10s. to £5. 5s. nett, Tyne; alum in lump, £5. 10s. nett, Glasgow; caustic soda, white, 74° £9. 2s. 6d., 70/72° £8. 2s. 6d., 60/62° £7. 2s. 6d., and cream 60/62° £7., all nett, Liverpool; bleaching powder, £7. 5s. nett, Tyne; saltcake, 17s. 6d.; borax, English refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks £6. 10s., and 1 cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4¼d. nett, for Scotch and English deliveries (for export, 4¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3¼d. nett, f.o.b. Glasgow); chlorate of potash, 5½d. less 5%, Liverpool; nitrate of soda, 8s. 10½d.; sulphate of ammonia, £10. 18s. 9d. to £11., prompt, f.o.b., Leith; sal-ammoniac, first and second white, £39. and £37. nett, any port; sulphate of copper, £15. 10s. less 5%, Liverpool; paraffin scale, hard 1¾d.; soft, 1¾d. to 2d. per lb.; paraffin wax 120° semi-refined, 2½d.; paraffin spirit (naphtha), 7d. per gallon; paraffin oil (burning), standard No. 1 grade, 4¼d. at works, for Scotch buyers (English sales, ¾d. to ¾d. lower); ditto (lubricating) 865° £4. 5s.; 885° £4. 10s., and 890/895° £5. to £5. 10s. Week's imports of sugar at Greenock were 6,500 bags beet unrefined, and 100 bags beet refined.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—The demand is steady, being so nearly the end of the half-year. Linseed oil steady: spot, 19s. 4½d.; forward, 19s. 3d. to April, 18s. 10½d. May-Aug. Casks 17s. 6d., and barrels 25s. per ton extra. Boiled and refined from £1. to £2. per ton extra. Cotton oil dull;

spot, naked, 16s. 3d. sellers; forward, first four months, 16s. 6d.; crude, 14s. 9d., paid, spot, with sellers at 15s. for first four months. Other oils unchanged in value.

CAKES.—The volume of trade during the year has been slightly larger than 1893. The shrinkage in values caused by the low prices of all feeding stuffs has been very remarkable and without precedent, no doubt largely due to the greatly diminished purchasing power of the farmer. Against this it is difficult to understand the greatly decreasing demand for second quality cakes, probably due to the influence of the new Fertilisers and Feeding Stuffs Act. The year opened with 95% quality of linseed cakes at £8. 10s. until about March, when it fell to £7. 15s., and again collapsed to £7. by May 1st, and further to £6. 15s. 15 days afterwards, which price they have only touched once during the last 30 years. The value, however, continued to fall to £6. 5s. by July, and in some instances to £6., when it recovered to £6. 10s. in October, and the year closing at £6. 5s. Cotton cakes have been in fairly good demand throughout the year. The heavy arrivals of seed prevented prices from rising as in previous year. The year opened for best qualities at £5., which was reduced to £4. 12s. 6d. in March, being further reduced to £4. by May 1st, and in October to £3. 10s., which is about the present value. Rape cakes have been in fair request. Black Sea were £3. 12s. 6d. on January 1st, which by June were selling at £2. 17s. 6d. until October, when they dropped to £2. 10s., which is about the value now; and East India rape cakes are quoted about £3. 10s. Now that prices are at a low level, a large and profitable trade is looked forward to in the New Year.

PAINTS.—Manufacturers are busy stock-taking, which is about the only business under serious consideration. Leads and zinc oxide are unchanged. Venetian red, dry from £3. 15s. In oil, £12. per ton. Black, yellow ochre, and oxide paints from £12 per ton. Black varnish, £5. 10s. per ton. Paint remover from 25s. to 30s. per cwt. Oak varnish from 5s. 6d. per gallon.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron, dull: Scotch warrants closed at 41s. 7d., Middlesbrough 34s. 9d. cash, and hematite 42s. 9d. Copper, quiet: Chili bars, G. O. B.'s and G. M. B.'s, closed at £40. 13s. 9d. to £40. 18s. 9d. cash, and £41. 1s. 3d. to £41. 6s. 3d. three months. Tin, firm: Straits closed at £60. 5s. to £60. 15s. cash, and £60. 5s. to £60. 15s. three months; Australian, £60. 7s. 6d.; English ingots, £64. 0s. 0d. Lead, steady: Spanish, £9. 12s. 6d.; English, £9. 12s. 6d. to £9. 15s. Silesian spelter, ordinary: £14. 5s. Nickel, 1s. 3½d. Antimony, £32 15s. Quicksilver: first hands, £6. 12s. 6d.; second hands, £6. 11s. 6d. Copper shares, dull: Cape, 1½ to 1½; Copiapo, 1½ to 1½; Libiola, 3½ to 3½; Mason and Barry, 1½ to 1½; Rio Tinto, 15 to 15½; Tharsis, 4½ to 4½.

WOLVERHAMPTON, WEDNESDAY.—A slow market owing to the quarterly meetings taking place next week, negotiations being held over till then. Works have restarted in earnest, but the number of orders on hand is not large. Quotations show no improvement. Galvanised sheets: doubles £9. 12s. 6d. delivered Liverpool, and £9. 15s. London; black doubles £6. 10s., trebles £7., stamping sheets £8., best thin sheets £10., merchant bars £6. 5s., common £5. 10s. Pig iron in fair demand; local best 52s. 6d. upwards, common, 36s. to 37s.

REPORT ON MANURE MATERIAL.

Business throughout the week has been of a holiday character, and it is too early as yet to form any opinion as to probable course of the market over the next few months.

Quotation for 75/80% Florida phosphate rock is 7¼d. per unit in cargoes c.i.f. to United Kingdom shipment during the year, but this price does not induce business. The value of South Carolina River rock is about 6¼d. per unit, and this price would also be taken for 60/65% Algerian. For Peace River rock, 60/65%, about ¼d. per unit more would have to be paid.

We do not hear of any fresh business in cargoes of River Plate bones, but £4. 10s. would no doubt be accepted for good United Kingdom ports, and probably a shade less would do for cargoes of large size. The quotation for crushed Kurachee bones remains £4. 12s. 6d. per ton. The position of Bombay bone meal is somewhat firmer, and it is doubtful whether less than £4. 12s. 6d., delivered Liverpool, Glasgow, and Hull, would now be accepted.

Nitrate of soda is firm in all positions. On spot the value of ordinary quality is 8s. 9d., and of refined 8s. 10½d. per cwt. The nearest value of due cargoes is 8s. 10½d., and it is reported that there are buyers at the price.

There is nothing of interest to report in miscellaneous material.

New Companies.

Ferro-Sodium Co., Ltd.—CAPITAL £2,000, in £1. shares (1,000 vendors' and 1,000 ordinary). This company has been formed to enter into a certain invention for improvements in the purification of iron and steel for casting, and the letters patent granted to R. L. Sentinella; and to carry on the business of metallic sodium flux, or any other fluxes.

Cheswright and Nicholls, Ltd.—CAPITAL, £5,000, in 60 preference, and 40 ordinary shares, all of £50. each, to carry on the business of manufacturing, selling and dealing in tea-lead, tin-foil and other foil, and any other article composed of, or involving any combination of lead or tin; and to adopt a certain agreement made between C. Cheswright, H. Nicholls, and D. Smith.

Epping Natural Mineral Water Co., Ltd.—CAPITAL, £5,000, in £1. shares. This company has been formed to acquire and carry on the business at present carried on by L. V. Lloyd and A. E. Pike, under the style of "The Epping Natural Mineral Water Co.," at Theydon Garnon, Epping, and at 28, Albemarle-street, London. The subscribers to the memorandum of association are to be the first directors, until three directors have been appointed.

Gartside and Co., of Manchester, Ltd.—CAPITAL, £500,000, in £10. shares. This company has been formed to acquire the business of John H. Gartside and Co., Ltd., to enter into a certain agreement, and to carry on the business of calico printers and bleachers, dyers, printers, embossers, spinners, and doublers. The subscribers to the memorandum of association are: J. H. Gartside, 56, Fountain-street, Manchester; W. Lees, 56, Fountain-street, Manchester, director; C. T. Bradbury, 56, Fountain-street, Manchester, director; G. Bolden, 56, Fountain-street, Manchester, director; T. Mills, 56, Fountain-street, Manchester, secretary; J. C. Wild, 56, Fountain-street, Manchester, salesman; J. O. Knott, Ashton-under-Lyne, bookkeeper.

John F. Hill and Co., Ltd.—CAPITAL, £50,000, in £5. shares. This company has been formed to acquire and carry on the business of calico printers and otherwise, heretofore carried on at Bowker Bank Print Works, Manchester, and 72, Mosley-street, in the same city, under the style of John Hill and Co. The subscribers to the memorandum of association are: J. F. Hill, Holland House, Crumpsall, Manchester, calico printer; S. Wrigley, Highfield, Crumpsall, Manchester, calico printer; T. Black, Rosland, Crumpsall, Manchester, calico printer; E. Parnell, Levenshulme, salesman; J. Harrower, Sale, Chester; R. J. Bransby, Salford, salesman; E. V. Stapley, Crumpsall, spinster; A. Wrigley, Crumpsall, married woman.

Smoke and Fumes Annihilator, Ltd.—CAPITAL £120,000, in £5. shares. This company has been formed to carry on the business of manufacturers of smoke annihilators and other apparatus for the treatment of smoke or fumes, and to manufacture and render saleable and deal in carbon, ammoniacal, or other liquor; and to enter into a certain agreement for that purpose. The subscribers to the memorandum of association are: Duke of Westminster, Eaton, Chester; C. S. Slocock, J. P., Donnington, Ianker; Lord E. Hamilton, Coates Castle, Fulborough; W. F. D. Smith, M.P., Greenlands, Henley-on-Thames; J. S. Hopkins, Jesmond Grove, Edgbaston, Birmingham; W. M. Ward, Claremont-road, Handsworth, director; Lord Wantage, Lockinge, Wantage; Earl of Carnarvon, Highclere Castle, Newbury.

George Woolliscroft and Son, Ltd.—CAPITAL, £35,000, in £5. shares. This company has been formed to acquire and carry on the business of a brick and tile manufacturer and merchant, now carried on by George Woolliscroft, at Hanley, Chesterton, and Eturia, Staffs., and also at Leeds and London, under the style of George Woolliscroft and Son. The subscribers to the memorandum of association are: Geo. Woolliscroft, Hanley, brick manufacturer; G. Woolliscroft, jun., Haddingley, Leeds, agent; E. B. Woolliscroft, Hanley, cashier; A. E. Blizard, Hanley, accountant; H. Todd, Eturia, foreman; J. Whyman, Hanley, foreman; E. Caswell, Ashbury, traveller.

Tunstall and Co., Ltd.—CAPITAL £25,000, in 320 £6. per cent. cumulative preference shares of £25. each, and 1,700 ordinary shares of £10. each, to acquire and carry on as a going concern the business carried on by Tunstall and Co., at St. Helens Chemical Works, Newlay, and at Leeds Bridge, Leeds, as manufacturers of, dealers in, and contractors for chemicals and chemical products, and, among other things, to carry on the business of colliery owners, metallurgists, electrical and mechanical engineers. The subscribers to the memorandum of association are: C. J. Tunstall, Upper Bank House, Horsforth, tar distiller; E. R. Tunstall, Upper Bank House, Horsforth, married woman; H. A. Watson, 17, Cavendish-road, Leeds, tar distiller; E. S. Watson, 17, Cavendish-road, Leeds, married woman; J. S. Welch, Fall Farm, Bramley, manager; C. Scriven, 7, Greek-street, Leeds, solicitor; and H. Whitfield, 9, East Parade, Leeds, chartered accountant.

The Patent List.

This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

- Gas and Liquid Meters. W. A. and W. E. Thompson. 22,272. December 20.
Photographic Dark Slides. H. H. O'Farrell. 24,170. December 17.
Vessels for Spraying and Carbonating Liquids. T. and D. Rylands. 24,476. December 17.
Steam Boilers and Flues. W. and W. G. Smith. 24,431. December 17.
Brick Kilns. F. H. Jung. 24,495. December 17.
Brewing Materials. R. C. Garton and C. H. Meyer. 24,511. December 17.
Ferro-Zinc Alloys. M. M. Marius, G. Buffier, E. Marcellot, and G. Dardespinoe. 24,533. December 17.
Utilising Hot Gases Escaping from Furnaces. R. Reuter. 24,538. December 17.
Electrolysis. C. Kellner. 24,541. December 17.
Dry Kilns. V. L. Emerson. 24,584. December 18.
Burning Coal Dust. C. W. Claybourne. 24,610. December 18.
Manufacturing Gas. J. L. Hastings and C. L. Hawk. 24,624. December 18.
Apparatus for Raising Liquids. F. M. Grumbacher. 24,628. December 18.
Electrolysis. H. S. Blackmore. 24,630. December 18.
Purifying Liquids by Electrolysis. J. T. Harris. 24,639. December 18.
Cement. J. S. Gabriel. 24,646. December 18.
Manufacture of Carbon Dioxide. J. S. Wallace and F. L. Ball. 24,651. December 18.
Manufacture of Carbon Dioxide. J. S. Wallace and F. L. Ball. 24,652. December 18.
Steam Generators. H. Shield and D. J. Howells. 24,675. December 19.
Combustion of Liquid Hydrocarbons. H. V. Ripplingill. 24,726. December 19.
Drying and Packing White Lead. E. J. Read. 24,746. December 20.
Exhausting and Propelling Fluids. C. W. James and G. Watson. 24,751. December 20.
Mechanical Furnaces. C. W. James and G. Watson. 24,752. December 20.
Extracting Gold without Water. W. H. Hyatt. 24,782. December 20.
Filtering and Purifying Sewage. J. D. T. and B. Briggs. 24,783. December 20.
Manufacture of Varnish. G. Pommerhans. 24,799. December 20.
Incandescent Lamps. C. Gautsch. 24,805. December 20.
Manufacture of Cyanides and Ferrocyanides from Sulphocyanides. J. Raschen, R. H. Davidson, and J. Brock. 24,814. December 20.
Manganese Alloys. J. F. Allen and J. Brock. 24,815. December 20.
 Parchment Paper. H. Sweetapple. 24,826. December 21.
Multiple Evaporators. J. McNeil and H. W. Aitken. 24,829. December 21.
White Lead Pigment. W. Moody and M. N. D'Andria. 24,830. December 21.
Utilization of Iron Residues. C. Dreyfus. 24,837. December 21.
Utilizing Waste Heat from Furnaces. J. Horrocks. 24,843. December 21.
Utilization of Spent Acid from Pickling. T. Parker. 24,859. December 21.
Extraction of Metals from Sulphide Ores. T. Parker. 24,864. December 21.
Utilization of Waste Products. P. C. D. Castle. 24,877. December 21.
Manufacture of New Carbonic Esters. O. Isenay. 24,901. December 21.
Steam Boiler Furnaces. Taylor's Smokeless Boiler Syndicate Ltd., and J. Donaldson. 24,913. December 21.
Incandescent Burners. A. Ricks. 24,921. December 21.
Incandescent Burners. C. Gautsch. 24,922. December 21.
Brick-making Machinery. C. G. Picking. 24,925. December 21.
Brick and Limekilns. G. Warren. 24,946. December 22.
Paint-grinding Mill. W. P. Thompson. 24,956. December 22.
Production of Chemical Compounds. H. E. Newton. 24,958. December 22.
Manufacture of New Sulphonic Acids. C. D. Abel. 24,999. December 22.
Peat Briquettes. E. Stauber. 25,001. December 22.
Steam Generators. E. Brillie. 25,214. December 22.
New Process for Producing Polyazo Dyestuffs. S. Pitt. 25,018. December 22.

Gazette Notices.

PARTNERSHIPS DISSOLVED.

- J. OWEN and L. B. S. DUTTON, colliery proprietors, Brownhills, Staffordshire under the style of Owen and Dutton.
A. W. BARNES and W. THORNE, brick, tile, and pipe manufacturers, Saintwell, near Cardiff and Cardiff, under the style of the Ely Brickworks Company.
W. WHYSALL and B. G. SKIDWORTH, chemists and druggists, Grantham.
R. F. GLOVER and H. SHINER, electro-gilders, platers, and gold cutters, Birmingham, under the style of R. F. Glover and Co.

BANKRUPTCY ACTS, 1883 and 1890.

Receiving Order.

- JAY, ROBERT CHARLES, Regeat's Wharf, Maroon-street, Limehouse, E., late St. Luke's-road, Westbourne Park, W., tank manufacturer.

Adjudications.

- HOLMES, JAMES CORNELIUS, Flinsbury Pavement, E.C., and Jerningham-road, New Cross, S.E., plaster merchant.
CROWTHER, JOSEPH (late carrying on business with David Crowther, deceased under the style of Benjamin Crowther and Sons), Harbury, late Osett, York, shoe dyer.
HAWKER, JOSEPH, Lazon, bleacher and dyer.
MARSH, CHARLES OFFER, Selby Oak, Worcestershire, chemist.

IMPORTS OF CHEMICAL PRODUCTS

AT
THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending December 22nd.

Acetate of Lime—
U. States, 830 pkgs. W. Johnston & Co.
" 830 R. & J. Garroway

Acetic Acid—
Holland, 5 pkgs. Berger, Kahler & Co.

Alkali—
France, 425 c. Arnati & Harrison

Alum—
Holland, 43 pkgs. Ohlenschlager Bros.
" 30 H. Wallace & Co.

Amyl Acetate—
Germany, 5 pkgs. F. Stahlschmidt & Co.

Antimony—
Japan, 100 t. Pillow, Jones, & Co.

Antimony Ore—
Portugal, 50 t. J. Bamber
Sydney, 48 F. Williams

Asbestos—
France, £25 Girard Frs. & Co.
Italy, 550 British Asbestos Co.
" 124 Mory & Co.
" 19 A. Laming & Co.
Germany, 12 Craven & Co.

Barytes—
Belgium, 68 cks. J. L. Lyon & Co.
" 25 W. Harrison & Co.
" 32 Burrell & Co.
Germany, 19 J. Kitchin, Ltd.

Camphor—
Germany, 3 pkgs. L. & I. D. Jt. Co.
" 53 Hale & Son

Caoutchouc—
France, 14 c. L. & I. D. Jt. Co.
" 27 Girard & Co.
Peru, 19 Prop. Bull. Wf.
Natal, 20 L. & I. D. Jt. Co.
Aden, 6 " "
E. Indies, 136 " "
P. E. Africa, 66 S. Figgis & Co.

Castor Oil—
France, 10 brls. Beresford & Co.
" 40 Lucas & Spencer's
" 20 cks. J. T. Morton
Italy, 5 cs. Chaplin & Co.
" 5 B. Balchin

Caustic Potash—
Belgium, 50 c. Petri Bros

Chemicals (otherwise undecoded)

Germany, 44 pkgs. Craven & Co.
" 5 Domeier & Co.
" 6 Phillips & Graves
" 71 A. & M. Zimmermann
Holland, 1 G. Rahn & Co.
" 15 H. Lorenz
Belgium, 13 T. Palmer
Germany, 2 9 Burgoyne & Co.
" 18 L. & I. D. Jt. Co.
Holland, 6 J. Barber & Co.
" 6 Burt, Boulton, & Co.
U. States, 29 A. P. Morris

Cream of Tartar—
Spain, 6 pkgs. W. C. Bacon & Co.

France, 10 C. F. Gerhardt
" 2 E. W. Carling & Co.
Spain, 15 B. & F. Wf. Co.
France, 4 " "
" 15 W. C. Bacon & Co.
Holland, 10 Kirkpatrick & Co.

Dextrine—
Germany, 83 pkgs. Pronk, Davis, & Co.
" 75 M. D. Co.
" 200 Hernu, Peron, & Co.

Dyestuffs—
Annatto
France, 4 pkgs. B. & F. Wf. Co.
E. Indies, 2 W. Hutchinson & Co.

Cutch
Rangoon, 700 pkgs. A. Howden & Co.
" 350 Arracan Co., Ltd.
" 100 Brown & Elmslie

Extracts
France, 25 pkgs. B. & F. Wf. Co.
" 5 Union L. Co.
" 8 Prop. Chmbln's Wf. Ltd.

60 cks. T. H. Lee
500 brls. Boucher, Mortimore, & Co.

Germany, 200 pkgs. J. Knill & Co.
Denmark, 2 Tegner, Price, & Co.
Canada, 320 A. J. Humphrey
Belgium, 650 T. H. Lee
115 L. J. Levinstein & Sons

Indigo
E. Indies, 35 cts. L. & I. D. Jt. Co.
" 10 Williams, Torrey, & Co.
" 68 Arbuthnot, Latham, & Co.

Logwood
Greytown, 60 t. L. & I. D. Jt. Co.
Jamaica, 28 " "

Myrabolams
E. Indies, 1,666 pkgs. P. & O. Co.

Saffron
Spain, 1 pkgs. Middleton S. S. Wf. Co.
" 1 C. Brumlen & Sons

Shumac
Italy, 100 pkgs. J. Graves
" 50 J. Kitchin Ltd.
" 200 W. Shelcott

Turmeric
E. Indies, 150 pkgs. L. & I. D. Jt. Co.

Dyestuffs (otherwise undecoded)
France, 3 pkgs. Skilbeck Bros.
Canada, 22 A. J. Humphrey

Farina—
Germany, 100 pkgs. Prop. Scott's Wf.
France, 2 Hernu, Peron, & Co.

Glucose—
Germany, 100 pkgs. 100 c. J. Barber & Co.
" 100 100 c. Anderson, Becker, & Co.
" 405 442 J. Barber & Co.
U. States, 1,000 1,000 Fuerst Bros.
" 100 602 " "
" 265 307 L. & I. D. Jt. Co.
" 250 250 Humphrey & Co.
" 1,000 1,000 Beck & Pollitzer
" 1,000 1,000 Beresford & Co.
" 1,300 1,300 Fellows, Morton, & Co.
" 500 500 L. Sutro & Co.

Lead Acetate—
Germany, 7 pkgs. Beresford & Co.
Holland, 37 F. Boehm
" 37 J. Owen

Manganese—
Germany, 14 t. H. Johnson & Sons

Manure—
Melbourne, 400 t. F. J. Cornwell, Son & Co.
Sydney, 100 Landor, Anderson & Co.
" 100 A. Hunter & Co.
" 3 Un. M. & A. Co., of Aust.
Germany, 5 A. J. Luke & Co.
Belgium, 20 H. & E. Albert

Methyl Alcohol—
Germany, 9 dms. Lister & Biggs

Mica—
Rangoon, £15 W. M. Smith & Sons

Naphthaline—
Belgium, 15 pkgs. Co-op. L. Ass'n

Naphthol—
Holland, 4 pkgs. G. Rahn & Co.

Ochre—
Holland, 2 cks. Phillips & Graves
France, 89 W. Harrison & Co.

Ozokerit—
Germany, 532 pkgs. Grosscurth & Luboldt.
" 135 M. D. Co.

Paraffin Wax—
U. States, 200 brls. H. Hill & Sons
Rangoon, 800 " "
U. States, 1,385 Anglo-Amer. Oil Co.

Phosphate Rock—
France, 413 t. Anglo-Cont. Guano Works
" 230 A. Hunter & Co.
Belgium, 30 H. & E. Albert
" 160 Lawe's Manure Co., Ltd.

Pitch—
S. Russia, 484 brls. C. S. Lovell

Plumbago—
Italy, 102 pkgs. A. Laming & Co.
U. States, 3,100 Rosenberg, Howe & Co.
Germany, 44 cks. Prop. Hay's Wf.
Italy, 80 J. Thredder, Son & Co.
Germany, 45 cs. Prop. Scott's Wf.
Holland, 1 B. Gallaway
Ceylon, 70 brls. Doultou & Co.
" 177 120 R. G. Hall & Co.
" 164 J. Thredder, Son & Co.
Germany, 2 Beck & Pollitzer

Potash—
France, 100 c. F. W. Berk & Co.

Potassium Carbonate—
Germany, 20 c. H. Lambert
France, 40 F. J. Putz & Co.
Germany, 382 W. G. Blagden
France, 70 Petri Bros.

Potassium Oxalate—
Holland, 10 pkgs. F. Boehm

Potassium Sulphate—
France, 9 pkgs. C. J. Langmead
Belgium, 101 Petri Bros.

Pumice Stone—
Italy, 10 t. B. Gallaway
" 14 B. & N. Wf. Co.

Pyrites—
Spain, 1 2 1/2 t. C. L. Vasey & Co.
" 2,085 C. Tennant, Sons & Co.

Rosin—
U. States, 1,312 brls. Produce Brokers Co., Ltd.
" 1,000 H. Hill & Sons
" 2,900 Moore & Hole
" 6,600 F. & S. Chiesman & Co.
" 250 Ridley, Whitley & Co.
" 150 H. Hill & Sons

Saltpetre—
E. Indies, 2,341 bgs. Lucas & Spencer's Wf.
Germany, 138 cks. P. Hecker & Co.
" 80 J. Hall & Son
E. Indies, 950 Brown & Elmslie
Germany, 4 C. Wimble & Co.
" Petri Bros.

Soda Ash—
Holland, 4,000 c. R. Waters

Sodium—
Holland, 20 pkgs. J. Barber & Co.

Sodium Bichromate—
Germany, 925 c. C. Tennant, Sons & Co.

Starch—
Austria, 5 pkgs. Soundy & Sons
Belgium, 550 F. Claydon & Co.
" 160 Sawyer, Sons & Co.
" 20 Leach & Co.
" 161 T. H. Lee
Germany, 640 Horne & Co.
Holland, 340 A. Starck
" 531 Little & Johnston
" 20 Phillips & Graves
France, 40 P. & O. Co.
Belgium, 560 Prop. Scott's Wf.
U. States, 250 C. Tennant, Sons & Co.

Stearine—
France, 94 bgs. H. Hill & Sons
Belgium, 15 cks. D. C. Thomas & Sons

Sulphur—
Italy, 5 t. J. Kitchin, Ltd.
" 10 G. Boor & Co.
" 12 C. J. Capes & Co.

Tallow and Stearine—
U. States, 78 pkgs. W. Johnston & Co.
" 15 cks. Grindlay & Co.

Tartaric Acid—
France, 8 pkgs. Robinson & Co.
" 20 B. & F. Wf. Co.
Holland, 37 Kirkpatrick & Co.
" 4 " "

Turpentine—
N. Zealand, 500 brls. Fairclough, Dodd, & Jones

Ultramarine—
France, 11 cks. C. J. Langmead
Germany, 15 Steinhoff, Sons, & Co.
" 30 cs. J. Kitchin, Ltd.
Holland, 6 pkgs. Haefner, Hilpert, & Co.
" 8 cks. Spies Bros. & Co.
Belgium, 10 brls. Leach & Co.
Germany, 28 cks. T. Hamilton

Varnish—
U. States, 7 pkgs. L. & I. Dk. Co.
France, 5 Flageolet & Co.
U. States, 100 Fellows, Morton, & Co.

White Lead—
Germany, 10 cks. Randall Bros.
" 28 W. A. Rose & Co.
France, 19 J. Watts & Sons
Belgium, 19 brls. Perkins & Homer
" 34 cks. Burrell & Co.
" 19 brls. J. L. Lyon & Co.
Germany, 27 cks. Burrell & Co.

Wood Pulp—
Sweden, 4,164 pkgs. Ekman Pulp and Paper Co.
Austria, 102 Kirby Paper Works
Germany, 62 H. Lambert
" 406 W. Friedlander
Sweden, 40 Henderson, Craig & Co.
" 5,509 Tough & Henderson
" 340 E. J. & W. Goldsmith
Denmark, 360 G. F. Green & Co.
Holland, 1,740 E. J. & W. Goldsmith
" 109 Thames S. T. & L. Co. Ltd.
Norway, 80 W. G. Taylor & Co.
" 160 Becker & Co.
" 6,078 E. J. & W. Goldsmith
" 160 Horton Kirby Paper Works
" 800 Ekman Paper Co.
" 625 Moreton Cox Bros.
Germany, 133 H. C. Everett
Holland, 165 Henderson, Craig & Co.
Canada, 13,671 E. J. & W. Goldsmith
Holland, 540 Phillips & Graves

Zinc Oxide—
Germany, 50 pkgs. Beresford & Co.
Holland, 25 brls. M. Ashby, Ltd.
" 500 cks. Soundy & Sons

LIVERPOOL.

Week ending December 20th.

Acetate of Lime—
Rouen, 154 bgs. Co-op. W'sale Society, Ltd.

Barytes—
Antwerp, 1 ck. 20 bgs.
Rotterdam, 23 cks.

Bone Ash—
B. Ayres, 336 bgs.
Zarate, 361 J. Nelson & Sons, Ltd.

Bone Meal—
Bombay, 4,778 bgs.

Camphor—
Hamburg, 1 ck.

Castor Oil—
Marseilles, 60 cks

Chemicals (otherwise undecoded)—
Philadelphia, 15 cks. W. Blythe & Co.
Boston, 20 bxs. J. Cassels & Co.
New York, 21 " "

Colours—
Sierra Leone, 1 cs. 1 brl. Tomlinson & Co.

Hamburg, 2
Rotterdam, 18 8 cks.

Cream of Tartar—
Barcelona, 5 hds.

Dyestuffs—
Cocaine
Gd. Canary, 40 bgs. Kennedy & Moore
Extracts
Philadelphia, 200 bxs. 250 pkgs.
Nantes, 575 cks.
Bordeaux, 260

Fustic
Tampico, 5,761 stks. Gruning & Co.

Gambier
Singapore, 481 bls. 252 bgs. R. & J. Henderson
" 6,849 357

Oxalic Acid — Rotterdam, 15 cks. J. Rankine & Son	
Phosphate of Lime — Dunkirk, 180 bgs.	
Potash — Rotterdam, 20 cks. J. Rankine & Son	
Sheep Dip — B. Ayres, 100 dms.	
Soap — Philadelphia, 450 bxs. 14 crts. Fiume, 105 cs.	
Starch — New York, 400 sks. Fiume, 20 bgs. Wm. Stirling & Son	
Rotterdam, 4 crts. 62 cs. J. Rankine & Son	
Sulphur — Fiume, 250 bgs. T. Laurie	
Tartar — Bordeaux, 15 cks.	
Tin Oxide — Rotterdam, 2 cks. J. Rankine & Son	
White Lead — Rotterdam, 33 cks. J. Rankine & Son	
Wood Pulp — Gothenburg, 660 bls	

Zinc Oxide — Rotterdam, 20 cks. J. Rankine & Son	
Zinc White — Rotterdam, 6 cks. J. Rankine & Son	
TYNE.	
<i>Week ending December 22nd.</i>	
Alum Earth — Hamburg, 36 cks. Tyne S. S. Co.	
Aluminium — Antwerp, 1 cs. Tyne S. S. Co.	
Kieselguhr — Bergen, 10 bgs.	
Paint — Antwerp, 7 cks. Tyne S. S. Co.	
Phosphate — Oban, 750 t. Langdale's Chem. Manure Co.	
Pyrites — Huelva, 2,547 t. Scott Bros.	
Starch — Ghent, 64 cs. Tyne S. S. Co. Rotterdam, 76 Tyne S. S. Co.	
Tartaric Acid — Rotterdam, 4 cks. Tyne S. S. Co.	

Wood Pulp — Christiania, 440 bls.	
Zinc Oxide — Antwerp, 25 brls. 222 plates. Tyne S. S. Co.	

GOOLE.*Week ending December 19th.*

Alum — Rotterdam, 2 cks.	
Aniline Colours — Hamburg, 10 cks.	
Antimony — Boulogne, 1 ck.	
Caoutchouc — Boulogne, 11 cks. 1 cs.	
Dyestuffs — Alizarine Rotterdam, 147 pkgs. Extracts Ghent, 50 cks. Rouen, 73	
Dyestuffs (otherwise undescribed) — Rotterdam, 147 pkgs. Boulogne, 5 17 cs. 13 cks. Ghent, 2 10	
Farina — Hamburg, 1,100 bgs. Delfsryhl, 840	

Glucose — Calais, 100 bgs. Dunkirk, 100 Hamburg, 60 cks.	
Potash — Dunkirk, 20 cks. 92 dms. Antwerp, 7	
Pyrites — Huelva, 1,226 t.	
Rosin — Savannah, 3,075 brls.	
Saltpetre — Hamburg, 27 cks. Antwerp, 134 bgs.	
Soda — Rotterdam, 2 cks.	
Waste Salt — Hamburg, 437 cks. 900 bgs.	

GRIMSBY.*Week ending December 22nd.*

Chemicals (otherwise undescribed) — Hamburg, 9 cks 6 pkgs.	
Colours — Hamburg, 17 cks. 85 pkgs. Antwerp, 17	
Farina — Hamburg, 20 bgs.	

EXPORTS OF CHEMICAL PRODUCTS

OF

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.**LONDON.***Period ending December 22nd.*

Alum — Salonica, 5 t. £28	
Ammonia — Bombay, 1 t. 7 c. £50	
Ammonium Carbonate — Melbourne, 7 c. 20 cs. £44 Boulogne, 1 t. 40 Adelaide, 3 6 Bahia, 10 36	
Ammonium Chloride — Salonica, 1 t. 1 c. £39 Samsoun, 1 36	
Ammonium Sulphate — Trinidad, 17 t. 2 c. £218	
Arsenic — Melbourne, 5 t. £152 Yokohama, 1 15	
Barium Chlorate — New York, 10 c. £54	
Barium Nitrate — Bombay, 2 cs. £5 New York, 1 t. 17	
Boracic Acid — Sydney, 8 t. £234 Yokohama, 2 10 c. 83	
Borax — Rio de Janeiro, 11 c. £16 Delagoa Bay, 10 kgs. 25 Auckland, 12 13 Adelaide, 5 5	
Carbolic Acid — Bombay, 3 t. 4 c. £15 Colombo, 23 cs. 21 Rio de Janeiro, 14 28 Calcutta, 28 dms. 24 New York, 3 14 160	
Carbonic Acid Gas — Guernsey, 30 tubes £11	
Caustic Soda — Melbourne, 24 t. 19 c. £240 Brisbane, 15 2 145 Delagoa Bay, 4 11 Fremantle, 9 6 75 E. London, 8 15	
Toluol — Rotterdam, 16 puns. £189	
Chemicals (otherwise undes.) — Bombay, 5 cs. £18 Algoa Bay, 1 t. 66 Delagoa Bay, 17 pkgs. 98 Madras, 8 c 14 Singapore, 4 pkgs. 18 Auckland, 6 kgs. 33 Adelaide, 2 cs 18	
Chloride of Lime — Rio de Janeiro, 5 c. £15	

Citric Acid — Bombay, 11 cs. £44 Hamburg, 12 pkgs. 123 Marseilles, 10 kgs. 60 Mayence, 1 ck. 32 Cologne, 1 t. 3 c. 121 Natal, 3 19 Montreal, 10 kgs. 64	
Coal Products — Aniline Dye Melbourne, 2 pkgs. £21	
Anthracene — Cologne, 395 cks. £1,730 Rotterdam, 283 1,005 Dusseldorf, 232 2,081	
Benzol — Rotterdam, 52 puns. £348	
Naphtha — Auckland, 30 dms. £22	
Naphthaline — Hamburg, 12 cks. £97	
Pitch — Marseilles, 1,364 t. £2,465	
Tar — Treport, 2 cks. £11 Natal, 150 dms. 23 Hamburg, 7 runs. 50	
Copper Arseniate — New York, 5 c. £23	
Copperas — Rio de Janeiro, 6 t. 4 c. £20	
Copper Sulphate — Salonica, 1 t. £15 Auckland, 1 15 Rio de Janeiro, 1 18	
Cream of Tartar — Pt. Elizabeth, 1 cs. £4 Fremantle, 1 t. 5 c. 19 Melbourne, 1 t. 67 New Plymouth, 5 17 Auckland, 15 kgs. 40 Adelaide, 7 t. 494 Sydney, 2 5 156	
Cyanide — Delagoa Bay, 10 cs. £170	
Disinfectants — Sydney, 50 cs. £191 Melbourne, 10 28 Brazil, 1 t. 10 c. 56 Manila, 5 pkgs. 10 Rio de Janeiro, 8 42 111	
Guano — Guadeloupe, 314 t. £4,399	
Hydrochloric Acid — Trinidad, 40 crbys. £7	
Manure — Memel, 472 t. 4 c. £1,385	
Nitric Acid — Madras, 12 cs. £16	

Oxalic Acid — Trebizonde, 2 cks. £8 Lisbon, 1 t. 1 c. 36	
Phosphoric Acid — New York, 1 t. £130	
Potash Salts — Auckland, 3 t. 2 c. £420	
Potassium Bicarbonate — New York, 1 t. 12 c. £41	
Potassium Chlorate — Bombay, 4 cs. £24	
Potassium Prussiate — Sydney, 5 c. £25 Lisbon, 9 44	
Potassium Sulphate — Melbourne, 1 t. £25	
Saltpetre — Bombay, 10 c. £12 Lisbon, 4 t. 1 51 Algoa Bay, 10 11 Adelaide, 1 15 40	
Sheep Dip — Natal, 50 dms. £37 B. Ayres, 100 9 Sydney, 50 t. 3,150	
Soda Crystals — Newcastle, 27 t. 3 c. £54	
Sodium Bicarbonate — E. London, 2 t. £13 Fremantle, 5 c. 3	
Sodium Bisulphite — Melbourne, 1 t. 6 c. £9	
Sodium Nitrate — Auckland, 5 t. 3 c. £53	
Sodium Sulphate — Ghent, 50 t. £37	
Strontium Carbonate — New York, 10 c. £18	
Strontium Nitrate — Bombay, 4 cs. £14	
Sulphur — Melbourne, 105 t. £76 Auckland, 1 6	
Sulphuric Acid — Colombo, 3 t. £28	
Superphosphate — Martinique, 367 t. £1,468 Oporto, 1 5 c. 39	
Tartaric Acid — Newcastle, 2 t. £188 Trinidad, 2 cs. 18 Sydney, 5 c. 26 Lisbon, 1 92 Melbourne, 1 15 161 Auckland, 5 kgs. 5 48 Adelaide, 3 10 333	

Karachi, 8 40	
E. London, 2 11	
Natal, 3 15	

LIVERPOOL.*Week ending December 26th.*

Albumen — Lisbon, 3 c. £11	
Alum — Oporto, 6 t. 4 c. 3 q. £29 Antwerp, 2 10	
Alumina Sulphate — Portland, M., 10 t. 15 e. 3 q. £68	
Aluminoferic Cake — Lisbon, 2 t. 3 c 2 q. £8 Oporto, 1 2 3 4	
Aluminous Cake — Lisbon, 2 t. 3 c. £6	
Ammonium Carbonate — Oporto, 2 t. £69	
Ammonium Chloride — Beyrout, 1 t. 10 c. £56 Smyrna, 1 37 Syra, 8 15 Philadelphia, 8 10 1 q. 282 Rotterdam, 5 10 Manila, 4 8 Patras, 6 1 10 Barcelona, 1 37 Genoa, 1 24 Volo, 2 12 New York, 29 10 365 Las Palmas, 30 355	
Ammonium Sulphate — Bordeaux, 5 t. 3 c. £65 Malaga, 50 620 Teneriffe, 3 36 Valencia, 20 9 1 q 242 Barcelona, 51 3 575 N. Orleans, 10 120	
Antimony — Santander, 1 brl.	
Antimony Muriate — Antwerp, 13 c. £19	
Asbestos — Para, 1 cs. Rio de Janeiro, 1 Rosario, 1	
Barytes Sulphate — Lisbon, 2 t. 16 c. £10	
Bleaching Powder — Baltimore, 196 cks. Boston, 352 Iquique, 5 brls. Montreal, 75 N. Orleans, 75	

K. York, 1-10, 40	Ammonia, 10 1 2 142	Rotterdam, 200	Sodium Biforate—
Cape Town, 40 lbs.	Santander, 1 15 2 27	Savannah, 500	Antwerp, 35 cks.
Peking, 25	Genoa, 4 19 2 72	Sierra Leone, 623 4	Sodium Bicarbonate—
Philadelphia, 25	Oleria, 5 1 2 74	Aboussena, 12	Calcutta, 1,000 lbs.
Rangoon, 25	Laghu, 5 3 3 75	Antwerp, 105	Colombo, 3 cks.
Boric Acid —	Ammonia, 5 3 3 77	Axiu, 10	Genoa, 25
Borax, 13 c.	Wellington, N. Z., 15	Bony, 5	Hamburg, 1,250
Borax, 13 c.	Sydney, 25	C. C. Castle, 5	Hijogo, 1,250
Borax, 13 c.	Disinfectants —	Portland, 242	Kingston, Jam., 50
Borax, 13 c.	M. Video, 2 c. 1 q.	Salt Pond, 18 10	Leghorn, 40
Borax, 13 c.	Calcutta, 1 c. 9 cks.	Salt Cake —	Malta, 10 lbs.
Borax, 13 c.	Dried Blood —	Newport News, 176 t. 6 c.	Nantes, 10 lbs.
Borax, 13 c.	Gd. Canary, 15 t. 12 c. 3 q.	N. York, 200 13 1 q.	Newcastle, 20
Borax, 13 c.	Glucose —	Antwerp, 50 2 1 q.	New York, 100
Borax, 13 c.	Malta, 40 lbs.	Baltimore, 255 14 3 1 q.	Panama, 3
Calcium Chloride —	Iron Oxide —	Saltpetre —	Rangoon, 5
Calcutta, 15 t. 1 c.	Lisbon, 11 c. 1 q.	Para, 7 t. 10 c.	Bombay, 10
Calcutta, 15 t. 1 c.	Magnesium Chloride —	Pto. Alegre, 7 t. 10 c.	Copenhagen, 50 4
Calcutta, 15 t. 1 c.	Colombo, 2 t. 5 c.	Manaos, 5 12 2 q.	E. London, 20
Carbolic Acid —	Magnesium Sulphate —	Vera Cruz, 19 3 23	Havana, 20
Calcutta, 15 t. 1 c.	Lisbon, 3 t.	Sheep Dip —	Kurrachee, 250
Caster Oil —	Manure —	M. Video, 5 t. 29 c. 1 q.	Marseilles, 25
Calcutta, 15 t. 1 c.	Bordeaux, 14 t. 15 c.	B. Ayres, 18 14 3 345	Panama, 20
Caustic Potash —	New York, 7 10 10	Soap —	Pt. Natal, 20
Calcutta, 15 t. 1 c.	Oxalic Acid —	Barbadoes, 200 bcs.	Rangoon, 200 4
Calcutta, 15 t. 1 c.	Barcelona, 10 t. 2 c.	Bathurst, 105	Riga, 200
Caustic Soda —	Paint —	Bluefields, 500	Stockholm, 40
Calcutta, 15 t. 1 c.	Ayers, 1 cks.	Bombay, 700	Toronto, 50
Calcutta, 15 t. 1 c.	B. Ayres, 12 kgs.	Buenos Aires, 300	Valencia, 45
Calcutta, 15 t. 1 c.	Cadiz, 30 dms.	Calcutta, 350	Winnipeg, 700
Calcutta, 15 t. 1 c.	Hamburg, 4 cks.	Callao, 35 cks. 250 bolls.	Sodium Carbonate —
Calcutta, 15 t. 1 c.	Lisbon, 8 9	Chama, 40	New York, 35 lbs.
Calcutta, 15 t. 1 c.	Marseilles, 15 9	Gd. Canary, 459	Sodium Chlorate —
Calcutta, 15 t. 1 c.	Matanzas, 1	Havre, 120	Copenhagen, 15 cks.
Calcutta, 15 t. 1 c.	New York, 8	Kingston, Jam., 850	Hamburg, 2
Calcutta, 15 t. 1 c.	Rosario, 6	Manaos, 450	Antwerp, 2 kgs.
Calcutta, 15 t. 1 c.	Sagua la Grande, 2	New York, 1,400	Sodium Silicate —
Calcutta, 15 t. 1 c.	Gd. Canary, 1	Shanghai, 1,382	Bilbao, 35 lbs.
Calcutta, 15 t. 1 c.	Havana, 15	Sydney, 100	Sodium Sulphate —
Calcutta, 15 t. 1 c.	Madrass, 2	Alexandria, 161	Portland, 20 kgs.
Calcutta, 15 t. 1 c.	M. Video, 16	Algoa Bay, 150	Spent Oxide —
Calcutta, 15 t. 1 c.	Panama, 55	Antwerp, 600	Antwerp, 270 t.
Calcutta, 15 t. 1 c.	Shanghai, 10	Assine, 100	Sulphur —
Calcutta, 15 t. 1 c.	Sierra Leone, 6	Bayin, 50	Antwerp, 10 t.
Painters' Colours —	Painters' Colours —	Gibraltar, 127	Boston, 230 5 c.
Bahia, 15 cks. 5 bds.	Bahia, 15 cks. 5 bds.	Kurrachee, 29	Porto Alegre, 9
Baltimore, 100	Baltimore, 100	Madras, 2	Manaos, 1 10 2 q.
B. Ayres, 1 cks. 50 30 cks.	B. Ayres, 1 cks. 50 30 cks.	Malta, 55	Vera Cruz, 1 10 2 q.
La Guayra, 20	La Guayra, 20	Monrovia, 12	Havana, 2 18 3
Lisbon, 3	Lisbon, 3	Penang, 12	Sulphuric Acid —
New York, 4 25 150	New York, 4 25 150	Pernambuco, 300	Singapore, 10 c.
Pernambuco, 20	Pernambuco, 20	Pt. Elizabeth, 300	Superphosphate —
Seville, 1	Seville, 1	Portland, 3 3 pks.	Oporto, 13 t.
Tahiti, 100 dms. 64 cks. 300	Tahiti, 100 dms. 64 cks. 300	Rangoon, 45	Valencia, 50
Alexandria, 20 cks.	Alexandria, 20 cks.	San Francisco, 20 14	Venice, 1,795
Barranquilla, 2 kgs. 1	Barranquilla, 2 kgs. 1	Sierra Leone, 120	Treacle —
Candia, 1 toe. 2	Candia, 1 toe. 2	Singapore, 350	Amsterdam, 35 lbs.
Cape Town, 2	Cape Town, 2	Teneriffe, 259	Gotenburgh, 10
Cebu, 40	Cebu, 40	Vera Cruz, 20	New York, 2
Gibraltar, 80	Gibraltar, 80	Winnipeg, 20	Antwerp, 65 hf. pks. 140 pks.
Laghu, 80	Laghu, 80	Soda Alkali —	Ghent, 30
Oleria, 70	Oleria, 70	Barcelona, 80 bbs.	Terneuzen, 27 23 lbs.
Oporto, 100	Oporto, 100	Caceres, 47	Turpentine —
Pana, 85 5	Pana, 85 5	Lisbon, 50	Panama, 5 cks.
San Juan, 100 1	San Juan, 100 1	Portland, 30	Sierra Leone, 12
Vera Cruz, 100 1	Vera Cruz, 100 1	Smyrna, 35	Yarnish —
Winnipeg, 20	Winnipeg, 20	Oleria, 100	Calcutta, 1 cks.
Paris White —	Paris White —	Sevilla, 37	Hamburg, 1
Naples, 10 cks.	Naples, 10 cks.	Soda Ash —	Montreal, 12 cks.
Phosphorus —	Phosphorus —	Baltimore, 6,578 kgs. 75 dms. 35 tcs.	Genoa, 2
Vera Cruz, 5 c.	Vera Cruz, 5 c.	Boston, 200 100 cks.	Leghorn, 2
Potassium Bichromate —	Potassium Bichromate —	B. Ayres, 300 200 bbs.	Tulchuan, 1
Passages, 1 t. 1 c.	Passages, 1 t. 1 c.	Calcutta, 50 350 6	White Lead —
Potassium Chlorate —	Potassium Chlorate —	Ceara, 5 kgs.	Bahia, 20 t.
Oleria, 2 t.	Oleria, 2 t.	Gotenburgh, 800	Cape Town, 240 dms.
Hijogo, 2 10 c.	Hijogo, 2 10 c.	Hamburg, 250 18	Whiting —
Salt —	Salt —	Hijogo, 159	M. Video, 50 cks.
Amsterdam, 80 t.	Amsterdam, 80 t.	Kobe, 104	MANCHESTER
Bakana, 5	Bakana, 5	Lisbon, 17	Week ending December 27th.
Baltimore, 205	Baltimore, 205	New York, 8,773	Alkali —
Borabadoes, 100	Borabadoes, 100	Philadelphia, 707	Rio de Janeiro, 1 cks.
Boston, 100	Boston, 100	Rio de Janeiro, 300	Ammonium Chloride —
Calcutta, 5,721	Calcutta, 5,721	Yokohama, 30	Hamburg, 2 cks.
Cape Town, 10	Cape Town, 10	Havana, 3	Anthracene —
Dunrobin, 5	Dunrobin, 5	San Francisco, 40	Rotterdam, 20 cks.
E. London, 45 15 c.	E. London, 45 15 c.	Toronto, 399	Carbolic Acid —
Ghent, 140	Ghent, 140	Valparaiso, 25	Trepport, 150 bbs. 3 cks.
Gd. Bay, 7 10	Gd. Bay, 7 10	Winnipeg, 517	Caustic Soda —
Halifax, 150	Halifax, 150	Soda Crystals —	Gables, 5 dms.
Manaos, 39 17	Manaos, 39 17	Amsterdam, 50 bbs.	Jaffa, 130
M. Video, 5 11	M. Video, 5 11	Boston, 198	C. eose Salt —
Mined Bay, 17 17	Mined Bay, 17 17	Calcutta, 33 kgs.	Antwerp, 14 cks.
N. Orleans, 375	N. Orleans, 375	Constantinople, 50	Extracts —
N. York, 145	N. York, 145	Gibraltar, 34	Trepport, 10 cks.
Pana, 100	Pana, 100	Iquique, 50	Pitch —
Portland M., 230	Portland M., 230	N. Orleans, 140 cks.	Rotterdam, 14 t. 3 c.
		Alexandria, 70 318	Soap —
		Bombay, 175	Malta, 40 bbs.
		Philadelphia, 374	
		Pt. Natal, 30	
		Valparaiso, 500 50 bbs.	

Soda Ash—	
Latakia, 20 cks.	
Sodium Bicarbonate—	
Treport, 90 kgs.	
Tripoli, 20	
Sulphuric Acid—	
Rio de Janeiro, 14 cs.	
Tar—	
Antwerp, 10 cks.	
Toluol—	
Rotterdam, 18 pns.	

HULL.

Week ending December 22nd.

Ammonium Sulphate—	
Antwerp, 240 bgs.	
Reval, 207	
Venice, 87	

Bleaching Powder—	
Bremen, 15 cks.	
Boston, 50	
Fiume, 28	
Helsingfors, 97	

Caustic Soda—	
Bari, 35 dms.	
Helsingfors, 105 15 cks.	
Hango, 100 2	
Lihau, 100	
Palermo, 3	

Chemicals (otherwise undescribed)

Amsterdam, 20 cks. 5 pkgs.	
Antwerp, 5	
Bari, 12 cs.	
Constantinople, 250	395 silbs.
Copenhagen, 1 10	1 cs.
Gothenburg, 60 200	8
Hamburg, 37 11	192
Helsingfors, 15	
Konigsberg, 3 1	
Lihau, 5	120 kgs.
New York, 99 20	25 cs.
Odessa, 6	
Rouen, 7	140
Rotterdam, 19	
Reval, 2	1
Stettin, 2	1

Cottonseed Oil—

Antwerp, 5 t.	
Alexandria, 39 19 c.	
Gothenburg, 2 10	
Hamburg, 76	
Rotterdam, 140 15	
Stockholm, 1 10	
Stettin, 15 5	
Trieste, 30 3	

Dyestuffs (otherwise undescribed)**Linseed Oil—**

Antwerp, 4 t. 5 c.	
Bergen, 1 7	
Boston, 1 15	
Christiania, 5 9	
Copenhagen, 1 10	
Gothenburg, 1 2	
Hamburg, 5 4	
New York, 5 2	
Rotterdam, 37 14	
Stockholm, 1 14	
Stavanger, 3 15	

Painters' Colours—

Amsterdam, 5 cks.	
Antwerp, 16 1 cs.	
Alexandria, 120 pkgs.	
Bari, 4	
Christiania, 1 24	
Copenhagen, 4	
Catania, 4	
Dunkirk, 3	
Gothenburg, 1 4	
Ghent, 1 1	
Hamburg, 16	
Helsingfors, 60 1	
New York, 24	
Odessa, 180	
Palermo, 25	
Rouen, 1	
Rotterdam, 3 2 6 dms.	

Pitch—

Antwerp, 293 t.	
Copenhagen, 50	

Soap—

Amsterdam, 1 cs.	
Antwerp, 13	
Copenhagen, 2	
Gothenburg, 10	
Helsingfors, 2	

Tallow—	
Gothenburg, 9 cks.	
Harlingen, 7	
Rotterdam, 29	

Tar—

Amsterdam, 5 cks.	
Copenhagen, 10	
Hamburg, 2	
Rotterdam, 1 dm.	
Stockholm, 1	

Turpentine—

Alexandria, 5 cks.	
--------------------	--

Varnish—

Antwerp, 10 cks.	
Copenhagen, 1 dm. 1 cs.	
Ghent, 1	
Hamburg, 3	
Rotterdam, 2	

GLASGOW.

Week ending December 27th.

Acid—	
Bombay, 6 t. 14 c.	£32

Aluminous Cake—

Dunedin, 10 t. 3/4 c.	£24
-----------------------	-----

Ammonium Sulphate—

Barbadoes, 25 t. 9 1/4 c.	£310
Demerara, 184 10 1/2	1 594
St. Kitts, 20	250
Spain, 166 17	1,937
Charente, 274 18 3/4	3,575
Hamburg, 151 13	1,778
Barcelona, 24 18 1/2	286
Jersey, 301 11	1,850

Bleaching Powder—

Dunedin, 6 t. 1 3/4 c.	£49
New York, 7 3	57

Borax—

Antwerp, 19 c.	£19
----------------	-----

Carbolic Acid—

Rotterdam, 23 cks.	£70
--------------------	-----

Caustic Soda—

Dunedin, 11 t. 8 3/4 c.	£90
-------------------------	-----

Chloroform—

Bombay, 2 c.	£25
--------------	-----

Coal Products—

Aniline	
Calcutta, 1 3/4 c.	£44

Naphtha

Bordeaux, 5 t. 1 c.	£90
---------------------	-----

Pitch

Antwerp, 149 t. 15 1/2 c.	£261
Hamburg, 52	78
New York, 24 17	37
Amsterdam, 198	248
St. Nazaire, 550	730

Tar

Calcutta, 24 t. 15 c.	£305
Portland, 50	
Rangoon, 134	

Dyestuffs—

Allzarine Colours	
Dunedin, 13 c.	£63

Extracts

Antwerp, 1 t. 9 1/2 c.	£30
Portland, 4 12 3/4	129

Logwood

Dunedin, 8 t.	£97
---------------	-----

Sumac

Bombay, £25	
-------------	--

Dyestuffs (otherwise undescribed)

Dunedin, 5 c.	£27 10s.
---------------	----------

Lamp Black—

Portland, 2 t. 7 c.	£45
---------------------	-----

Lead Acetate—

Bombay, 6 t. 6 c.	£90
-------------------	-----

Linseed Oil—

Barbadoes, 3 t. 10 1/4 c.	£70
Dunedin, 11 4 1/2	279
Cape Colony, 3 2 3/4	84
Valparaiso, 3 15	90
Rangoon, 18 3/4	21

Litharge—

Bombay, 3 t. 8 c.	£44
-------------------	-----

Magnesium Sulphate—

Bombay, 8 t. 15 c.	£28
--------------------	-----

Manure—

Barbadoes, 50 t.	£559
St. Kitts, 5	£42 10s.
Spain, 69 2 1/2 c.	£840
Barcelona, 5	503

Nitrate of Lead—

New York, 10 t. 3 1/4 c.	£165
--------------------------	------

Nitric Acid—

Shanghai, £52	
---------------	--

Paint—

Dunedin, £44	
Cape Colony, 47	

Natal, 1 t. 19 c.	50
Colombo, 24	
Valparaiso, 549	
Penang, 208	
Rangoon, 27	

Painters' Colours—

Portland, 6 c	£66
Dunedin, 500	
Cape Colony, 179	
Natal, 31	
Colombo, 19	
Calcutta, 34	
Chili, 39	

Paraffin Wax—

Cape Colony, 2 t. 5 1/4 c.	£68
Nantes, 1 3 3/4	37
Antwerp, 1 19 1/2	49
Trieste, 13 17 1/2	317
Bordeaux, 5 13 1/4	133
Bilbao, 2 1	200
Barcelona, 8 2	214

Potassium Bichromate—

Dunedin, 17 1/2 c	£38
Spain, 16 t. 3 3/4	641
Antwerp, 5 6 3/4	201
New York, 20 13	820
Bombay, 3 9 3/4	132

Rosin Oil—

Christiania, 6 brls.	£12
----------------------	-----

Salt—

Valparaiso, 335 t. 13 1/2 c.	£340
------------------------------	------

Slag—

Rotterdam, 820 t.	£286
-------------------	------

Soap—

Colombo, 1 t. 5 c.	£20
Calcutta, 4 3	66
Valparaiso, 1 18 1/4	£35. 10s.

Sodium Bichromate—

Spain, 6 t. 1 c.	£198
Bombay, 2	63

Sulphuric Acid—

Penang, 4 t. 1 c.	£30
Rangoon, 30 13 1/2	178

Tallow—

Christiania, 12 c.	£3
Valparaiso, 3 t. 3	66

Varnish—

Cape Colony, £60	
Japan, 41	
Chili, 9	

White Lead—

Natal, £210	
Dunedin, 12 t. 13 1/2 c.	264
Cape Colony, 2 10	43
Natal, 2	40
Colombo, 1 5	25
Calcutta, 3	£42. 15s.
Antwerp, 1 1/2	£26
Amsterdam, 3 tins.	4

TYNE.

Week ending December 22nd.

Alkali—

Antwerp, 5 t. 1 c.	
Amsterdam, 8 6	
New York, 94 10	
Gothenburg, 14	
Rotterdam, 2 6	

Alum Cake—

Copenhagen, 50 t. 2 c.	
------------------------	--

Aluminous Cake—

Gothenburg, 5 t. 2 c.	
-----------------------	--

Ammonium Sulphate—

Valencia, 227 t. 8 c.	
-----------------------	--

Antimony—

Hamburg, 2 t. 13 c.	
Copenhagen, 1	
Rotterdam, 5	
New York, 47	

Barium—

Rouen, 16 t. 7 c.	
New York, 3 17	

Barytes—

Rouen, 185 t.	
---------------	--

Bleaching Powder—

Antwerp, 31 t. 12 c.	
Hamburg, 18 8	
Christiania, 36 13	
Copenhagen, 49 19	
Terneuzen, 2 15	
Rotterdam, 30 17	
New York, 125 2	
Gothenburg, 10 2	
Dronheim, 10 5	

Borax—

Ergasteria, 6 c.	
------------------	--

Caustic Soda—

Antwerp, 12 t. 5 c.	
Hamburg, 8 7	

Copenhagen, 2 18	
Rotterdam, 2 17	
New York, 72 10	
Chemicals (otherwise undescribed)	
Arendal, 3 q.	

Chloride of Lime—

New York, 90 t. 2 c.	
----------------------	--

Colours—

Antwerp, 17 c.	
----------------	--

Dried Blood—

New York, 18 c.	
-----------------	--

Guano—

Lisbon, 6 t. 19 c.	
--------------------	--

Litharge—

Rouen, 18 c.	
Amsterdam, 1 t. 3	
Gothenburg, 17	

Magnesia—

Hamburg, 17 c.	
Rouen, 1	
New York, 24 t. 1	

Magnesium Sulphate—

Christiania, 5 t.	
-------------------	--

Paint—

Antwerp, 15 c.	
New York, 4 t.	

Slag—

Rotterdam, 77 t.	
------------------	--

Soda—

Antwerp, 10 t. 1 c.	
Christiania, 42 13	
Svendborg, 30 4	
Amsterdam, 2 11	
New York, 50 2	
Gothenburg, 15 1	
Ergasteria, 12	

Soda Ash—

Hamburg, 10 t. 19 c.	
Barcelona, 10 9	
Christiania, 3 8	

Soda Crystals—

Rotterdam, 10 t. 2 c.	
-----------------------	--

Sodium Hyposulphite—

New York, 10 t. 4 c.	
----------------------	--

Sulphur—

Christiania, 50 t.	
Gothenburg, 36	

Superphosphate—

Venice, 300 t.	
----------------	--

Tar—

Riga, 24 t. 18 c.

PRICES CURRENT.

WEDNESDAY, JAN. 2nd, 1895.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

Acids:—		£	s.	d.
Acetic, 25% and 40%	per cwt.	7/-	&	10/6
Glacial	"	50/-		
Arsenic S.G., 2000°	"	0	15	0
Fluoric	per lb.	0	0	3 1/4
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0	10
(Cylinder), 30° Tw.	"	0	3	0
Nitric 80° Tw.	per lb.	0	0	1 1/4
Nitrous	"	0	0	1 1/4
Oxalic	nett	0	0	3 1/4
Phosphoric, 1750°	"	0	0	11
Picric	"	0	1	0
Sulphuric (fuming 50%)	per ton	15	10	0
(monohydrate)	"	5	10	0
(Pyrites, 168°)	"	3	0	0
" 150°	"	1	5	0
(free from arsenic, 145°)	"	1	6	0
Sulphurous (solution) S.G. 1025	"	3	0	0
Tannic (pure)	per lb.	0	1	0
Tartaric	"	0	0	11
Arsenic, white powdered	nett per ton	14	7	6
Alum (loose lump)	"	4	17	6
Alumina Sulphate (pure)	"	4	17	6
Aluminoferrous	"	2	7	6
Aluminium	per lb.	0	3	0
Ammonia, Anhydrous	"	0	1	4
" 880=28° B.	per lb.	0	0	3
" =24° B.	"	0	0	2 1/4
" Carbonate	nett	0	0	3 1/4
" Muriate	per ton	23	10	0
" (sal-ammoniac) 1st & 2nd	per cwt.	39/-	&	37/-
" Nitrate	per ton	41	0	0
" Phosphate	per lb.	0	0	10 1/4
" Sulphate (grey) London	per ton	10	17	6
" (grey) Hull	"	10	17	6
Aniline Oil (pure)	per lb.	0	0	5 1/4
Aniline Salt	"	0	0	4 1/4
Antimony	per ton	32	15	0
" (tartar emetic)	per lb.	0	0	9 1/4
" (golden sulphide)	"	0	0	10
Barium Chloride	per ton	6	10	0
" Carbonate (native)	"	3	5	0
" Sulphate (native levigated)	"	45/-	to	75/-
Bleaching Powder, 35%	nett	7	5	0
" Liquor, 7%	"	3	10	0
Bisulphide of Carbon	"	11	5	0
Chromium Acetate (crystal)	per lb.	0	0	6
Calcium Chloride	per ton	2	2	6
China Clay (at Runcorn) in bulk	"	17/6	to	30/-
Coal Tar Products and Dyes:—				
Alizarine (artificial) 20%	net per lb.	0	0	8
Magenta	"	0	3	9
Anthracene, 30% A, f.o.b. London	per unit per cwt.	0	1	1
Benzol, 90% nominal	per gallon	0	1	1
50/90	"	0	1	1
Carbolic Acid (crystallised 40°)	per lb.	0	0	5
(crude 60°)	per gallon	0	1	7 1/2
Creosote (ordinary)	"	0	0	2
(filtered for Lucigen light)	"	0	0	2
Crude Naphtha 30% @ 120° C.	"	0	0	5
Grease Oils, 22° Tw.	per ton	2	10	0
Pitch, f.o.b. Liverpool or Garston	"	1	13	0
Solvent Naphtha, 90% at 160°	per gallon	0	1	2 1/2
Lucigen and " Wells Oils	"	0	0	2 1/2
Copper	per ton	40	12	6
" Sulphate	"	15	7	6
" Oxide (copper scales)	"	39	0	0
Glycerine (crude)	"	15	0	0
(distilled S.G. 1250°)	"	40	0	0
Iodine	nett, per oz.	0	0	9
Iron Sulphate (copperas)	per ton	1	5	0
" Sulphide (antimony slag)	"	2	0	0
Lead (sheet) for cash	"	10	15	0
" Litharge Flake (ex ship)	"	13	10	0
" Acetate (white)	"	24	15	0
" brown	"	15	10	0
" Carbonate (white lead) pure	"	16	0	0
" Nitrate	"	20	0	0

Lime, Acetate (brown)		per ton	£	s.	d.
" (grey)	"	"	6	0	0
Magnesium (ribbon and wire)	per oz.	0	2	3	
" Chloride (ex ship)	per ton	2	10	0	
" Carbonate	per cwt.	1	17	6	
" Hydrate	per ton	17	0	0	
" Sulphate (Epsom Salts)	per ton	3	0	0	
Manganese, Sulphate	"	17	15	0	
" Borate	per cwt.	2	15	0	
" Ore, 70%	per ton	4	5	0	
Methylated Spirit, 61° O.P.	per gallon	0	1	10	
Naphtha (Wood), Solvent	"	0	3	0	
" Miscible, 60° O.P.	"	0	3	1	
Oils:—					
Cotton-seed	per on	18	10	0	
Linseed	"	21	10	0	
Petroleum, American	per gallon	0	0	5 1/4	
Stearine	per ton	26	0	0	
Phosphorus (yellow)	per lb.	0	2	2	
(red)	"	0	2	8	
Potassium (metal)	per oz.	0	3	7	
" Bichromate	per lb.	0	0	4 1/4	
" Carbonate, 90% (ex ship)	per ton	16	15	0	
" Chlorate	per lb.	0	0	5 1/4	
" Cyanide, 98%	"	0	2	1	
" Hydrate (Caustic Potash) 80/85%	per ton	21	10	0	
" (Caustic Potash) 75/80%	"	20	0	0	
" (Caustic Potash) 70/75%	"	19	10	0	
" Nitrate (refined)	per cwt.	1	2	6	
" Permanganate	per cwt.	3	0	0	
" Prussiate Yellow	per lb.	0	0	10	
" Sulphate, 90% (ex ship)	per ton	9	15	0	
" Muriate, 80% (do.)	"	8	7	6	
Silver (metal)	per oz.	0	2	3 1/2	
" Nitrate	"	0	2	10	
Sodium (metal)	per lb.	0	3	0	
" Carb. (refined Soda-ash) 48%	nett per on	4	15	0	
" (Caustic Soda-ash) 48%	"	4	0	0	
" (Carb. Soda-ash) 48%	"	4	0	0	
" (Alkali) 58%	"	4	0	0	
" (Soda Crystals)	"	2	5	0	
" Acetate (ex-ship)	"	14	5	0	
" Arseniate, 45%	"	11	0	0	
" Chlorate	per lb.	0	0	7 1/4	
" Borate (Borax)	net, per ton	20	0	0	
" Bichromate	per lb.	0	0	3 1/4	
" Hydrate (77% Caustic Soda) (f.o.b.) net pr. ton	lots	10	0	0	
" (74% Caustic Soda)	"	9	0	0	
" (70% Caustic Soda)	"	8	0	0	
" (60% Caustic Soda)	"	7	0	0	
" (60% Caustic Soda, cream) (f.o.b.)	"	7	0	0	
" Bicarbonate	"	5	12	6	
" Hyposulphite	"	5	10	0	
" Manganate, 30%	"	16	0	0	
" Nitrate (95%) ex-ship Liverpool	per cwt.	0	8	10 1/4	
" Nitrite, 98%	per ton	29	0	0	
" Phosphate	"	15	0	0	
" Silicate (glass)	per ton	5	2	6	
" (liquid, 100° Tw.)	"	4	5	0	
" Stannate, 40%	per cwt.	3	2	9	
" Sulphate (Salt-cake)	per ton	0	17	6	
" (Glauber's Salts)	"	1	5	0	
" Sulphide	"	8	10	0	
" Sulphite	"	5	7	6	
Strontium Hydrate, 100%	"	8	10	0	
Sulphocyanide Ammonium, 95%	per lb.	0	0	7	
" Barium, 95%	"	0	0	5	
" Potassium	"	0	0	7 1/4	
Sulphur (Flowers)	per ton	7	5	0	
" (Roll Brimstone)	"	5	5	0	
" Brimstone: Best Quality	"	3	35	0	
Superphosphate of Lime (26%)	"	2	7	6	
Tallow	"	2	10	0	
Tin Crystals	per lb.	0	0	6	
" English Ingots	"	64	0	0	
Zinc (Spelter)	per ton	14	5	0	
" Chloride (solution, 100° Tw.)	"	5	7	6	

THE CHEMICAL TRADE JOURNAL

AND
OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

No. 399.

SATURDAY, JANUARY 12. 1895.

Vol. XVI.

Contents.

	PAGE		PAGE
The Legislation of Smoke	17	Tar and Ammonia Products	24
Society of Chemical Industry	18	Report on Manure Material	24
The Disadvantages of Hot Pulling for Woollen Goods	19	The Metal Market	24
Sewage Schemes	19	Miscellaneous Chemical Market ..	24
The Mersey and Irwell Joint Com- mittee	20	The Copper Market	25
The Indian Shellac Industry	20	Liverpool Oil and Colour Market ..	25
The Melting-Points and Composi- tion of Candle Materials	21	Tyne Chemical Report	25
Exports of Alkali and Bleach	22	Hull Paint, Oil, and Colour Report ..	25
Detecting Soap in Lubricants	23	West of Scotland Chemicals	25
Petroleum Duty in Ceylon	23	New Companies	26
Dyers' Combination	23	The Patent List	26
Trade Notes	23	Gazette Notices	26
Liverpool Mineral Market	24	Imports	26
		Exports	29
		Prices Current	32

Notices.

ON JANUARY 19TH, 1895, OUR

ANNUAL SPECIAL ISSUE

Will Appear as Usual.

THIS DOUBLE NUMBER will, in addition to the ordinary features of the *Journal*, contain

ORIGINAL ARTICLES

of special interest to Chemical, Soap, Paint, and Varnish Manufacturers, Paper Makers, and users of Chemical Plant, &c.

It will also contain a number of Articles of general interest to Analysts, Metallurgists, Chemists, and the Chemical Trade, including a

COMPLETE REVIEW OF 1894;

An Article Illustrated with Original Photographs on

"REMINISCENCES OF JOHN DALTON,"

&c., &c.

Single Copies, Post Free 4d.

Special Advertisement Tariff: Extended Circulation.

See Advertisement on page 12.

All ORDERS for Advertisements and Copies should be sent as early as possible to

DAVIS BROS., 32, Blackfriars-st. MANCHESTER.

Advertisements.

Prepaid Advertisements of Situations Vacant, Premises on Sale or To be Let, Miscellaneous Wants, and Specific Articles for Sale by Private Contract are inserted in the *Chemical Trade Journal* at the following rates:—

10 Words and under..... 2s. 6d. per insertion
Each additional 10 words..... 0s. 6d.

Trade Advertisements, Announcements in the Directory Columns, and all Advertisements not prepaid, are charged at the Tariff rates, which will be forwarded on application.

Advertisements intended for insertion in the current week's issue should reach the office by **Wednesday morning** at the latest.

THE LEGISLATION OF SMOKE.

THE visit of the deputation of Manchester manufacturers to the Corporation Sanitary Committee a few days ago cannot fail to have considerable interest for manufacturers throughout the country, and we notice that the Manchester section of the Society of Chemical Industry has since devoted an evening to the consideration of the same subject. We have consistently advocated repressive legislation so far as smoke production is concerned, but we should be exceedingly sorry to endorse many of the local bye-laws, and local methods of interpreting more general enactments which have this object in view.

Some of the facts mentioned by Mr. Le Neve Foster in his paper read before the Society of Chemical Industry show most clearly the necessity for a thorough revision of the powers entrusted to those who have the administration of the law. So different is the mode of procedure in different towns that one entirely fails to see any connection between the various ideas of proportion which are responsible for this state of things. This is itself in our opinion a crying evil, but a still greater one, to our thinking, is that which was briefly touched upon by Mr. Foster in his similitude of the two manufacturers A and B. A is supposed to have three chimneys, each 40 yards high; B has one chimney 60 yards high. A's smoke never appears black; B's constantly appears black, but for all this B contaminates the air less than A, as his products of combustion escape at a much higher altitude and are more generally diffused. Still, though A and B may, in the aggregate, both burn the same quantity of coal per week, B will in all probability be hauled up and fined, while A escapes. A notable instance of this kind has occurred during the last few years in the salt district of Cheshire. On every side one sees forests of short stacks, each contributing its quota to the vitiation of the atmosphere, and for miles round dead trees and blighted herbage show the devastating effect of coal consumption and the smoke nuisance under these conditions. But prosecutions for smoke nuisance are comparatively unknown.

The mischief was done by the quantity of the stacks, or, in other words, the smoke effluents, rather than by the intensity of the effluent from any individual stack. Then two chemical works were erected in the same district, and each of these put up a chimney about a hundred and fifty feet high. There is not the slightest doubt that the mischief caused per ton of coal burnt, through these taller chimneys was infinitely less than that proceeding from the shorter stacks, but unfortunately the latter were difficult to discriminate one from the other, and consequently were left in peace; but the tall chimneys became a landmark upon which the eye of the local nuisance inspector soon learnt to rest with a loving familiarity, and the very efforts which the owners of the chemical works had made to avoid causing annoyance to their neighbours were the means of their

being subjected to constant harrass at the hands of the authorities.

It has always seemed to us that some relation ought to be established between the amount of nuisance caused and the amount of coal consumed. We do not think that it should be a case of simple proportion, as this would land us in a position of absurdity in extreme cases, but we do think that the law ought to be so amended, and so administered, that if a man concentrates his smoke and turns it into the air at a high altitude, he is less deserving of censure, (even though it be black at times), than the man who distributes his smoke by means of a number of chimneys at a low level. We think that if manufacturers throughout the country were to take up the matter in the same way as those in Manchester and devise some concerted action for bringing the subject before the central authorities, there can be no question that their position would receive more thorough and more favourable consideration than has hitherto been the case.

SOCIETY OF CHEMICAL INDUSTRY.

MANCHESTER SECTION.

THE usual monthly meeting of this section was held on Friday, 4th inst., at the Victoria Hotel. The Chairman of the Section, R. F. Carpenter, Esq., presided. A paper was read by Mr. R. Le Neve Foster on "The prevention of smoke arising from intermittent firing in various processes of the chemical and allied industries." Several members of the Manchester and Salford Sanitary Association and other gentlemen interested in the matter were present by invitation. Mr. Foster said the subject was one which interested not only those engaged in chemical and allied industries where intermittent firing was necessary, but was of equal interest to all engaged in manufacturing industries where coal was employed for the production of heat. His object was to place before the meeting the results of a series of observations made on various chimneys, with a view of elucidating whether the emission of black smoke could be minimised, and if practical means could be suggested to further the work which the Manchester Chemical and Allied Industries Association had begun. In most chemical operations the combustion of coal was found to be the cheapest and most suitable means of producing heat, consequently it was to the firing by coal that they must direct their attention, as in these days of keen foreign competition, economy was highly essential if we were to maintain our position as manufacturers. In regular firing, coal could be used in such a manner as to produce little or no smoke, and thus almost perfect combustion was secured; and, though the products of this combustion when issuing from a chimney would be invisible to the eye, they would consist principally of carbon dioxide (with perhaps a small amount of carbonic oxide) and an amount of sulphurous acid proportionate to the free sulphur contained in the fuel. No unconsumed or uncombined carbon would escape in the form of smoke, thus the maximum heating value of the coal would be secured without the contamination of the air by uncombined carbon. They must not, however, assume that unconsumed carbon (both free and in the form of hydrocarbons), was the sole vitiator of the atmosphere issuing from a chimney, for the invisible products of even perfect combustion were in themselves large factors in the contamination of the air. In chemical and allied industrial operations regular firing was an impossibility. The firing had to be regulated not only according to the nature of the process, but also according to the various stages of the operation. No matter what appliances might be employed, or how carefully the fireman might attend to his fires, the process regulated the firing in these regulations. In addition to the intermittent firing in processes, even the firing of steam boilers in this class of works was a much more complex matter than in an ordinary factory. In a chemical works steam was required with the utmost irregularity, in contrast to an ordinary factory, where a regular and constant supply of steam was used solely for motive power. Further, in most chemical operations the apparatus or vessel had to be cooled on finishing, before it could be charged for a fresh operation. Then, when heat had again to be applied the fires had to be started *de novo* in order to heat a mass of cold brick-work and flues, entailing great difficulty in preventing the emission of black smoke at the commencement of each operation. Again, where a small leakage occurred in distilling operations (which could only be detected during working), the emission of black smoke could not be prevented till the entire charge was worked off. It was, therefore, evident that works where

intermittent firing was necessary were at a great disadvantage as compared with ordinary factories in the prevention of smoke. In spite of all these disadvantages, he was convinced, from the observations made under his direction, while no hard and fast line could be laid down for the emission of black smoke where intermittent firing was necessary, each individual manufacturer could do much by the strict supervision and careful construction of his plant. It was not possible for anyone to advise as to the best means to be adopted, even when knowing the nature of the manufacture carried on, unless fully acquainted with the exact method used, and this one manufacturer was hardly likely to tell another. It was apparent, however, that in many cases of intermittent firing much might be done to prevent the emission of black smoke, provided the fireman did his duty. In addition to what he might term the preventable instances, there were exceptional cases when the black smoke was not produced solely by the combustion of coal as in the making of "black ash," where volumes of smoke necessarily escaped—a difficulty which, unless some means of washing or absorbing the carbon were devised, was not to be overcome. In spite, however, of the utmost care, there were times when even in well-managed works black smoke was unavoidably emitted for a longer period than that allowed by the city authorities, though the average of a series of observations in that particular works would be below the allowance. In different towns there was a remarkable difference in construing what was a sufficient quantity of black smoke to be a nuisance. Manchester, for instance, fixed one minute per half hour, and, so far as he was aware, made no discrimination whatever as regards the nature of the manufacture carried on. Oldham allowed nine minutes per hour. In St. Helens a five minutes' continuous emission of black smoke was deemed a nuisance. Widnes had no fixed time, but as it stood in a somewhat different position to other towns on account of the peculiar nature of its manufactures, except in very flagrant cases no attention was given. Rochdale had no fixed limit. In Wolverhampton it was left to the medical officer of health, and depended upon the situation and height of the chimney, and the trade carried on. In Newcastle-on-Tyne five five minutes was allowed for the emission of black smoke from factory chimneys before it was deemed a nuisance. In Leeds five minutes in the hour. In Birmingham the inspectors watched the chimney for an hour. They reported the way in which the emission was made up, whether continuous or several emissions. The Town Clerk did not remember any summons being taken out against any person where the emissions were not over fifteen minutes in the hour. Further, for a first offence or where a long time had elapsed between offences letters of caution were sent out. Sheffield allowed six minutes in the hour, but where there was not more than three steam boilers and no furnaces four minutes in the hour only. At Stoke-on-Trent if black smoke was emitted for a longer period than 15 minutes proceedings were taken. Bolton allowed 2½ minutes in the half-hour. The Manchester Association had caused 1,827 half-hourly observations to be made of various chimneys of the members, and the result of these observations showed that black smoke issued for 3,224 minutes, an average of 1 minute 46 seconds per half-hour. It had been suggested that an increased number of chimneys would minimise the emission of black smoke, but this would only divide the smoke over a number of outlets, without in any wise altering its volume, though apparently it would lessen its volume to the eye. This opened out a point for consideration—the present unsatisfactory method of inspection. A chimney was watched, and the time during which black smoke issued was noted. No particulars were ascertained as to the height of the chimney or the quantity of coal used. These were most important factors. For instance, A and B were two manufacturers each using 200 tons of coal per month, and each obtained an equal combustion of his coal. A had three chimneys each 40 yards high; B had one chimney 60 yards high. A's smoke never appeared black; B's smoke constantly appeared black. Yet B contaminated the air less than A, as the products of combustion escaping at a much higher altitude were more widely diffused. The present methods of inspection were extremely fallacious. In order to fairly estimate the exact combustion in ratio to the coal consumed, the proportion of unconsumed carbon in ratio to the volume of the smoke should be determined. The height of the chimney, the situation of the works, and the nature of the processes should then guide as to whether the best means were being employed. He thought the points which needed the attention of all those engaged in manufactures were:—1. To see that the plant was constructed in such a manner as to consume the coal to the best possible advantage with a view to minimising the emission of black smoke. 2. To fire as carefully as was consistent with the processes carried on. 3. To consider whether a number of chimneys was advantageous or not. 4. To devise some method whereby the ratio of unconsumed carbon could be readily gauged in ratio to the volume of smoke emitted and the coal used. 5. Whether the inspection of chimneys should not be in the hands of a competent Government inspector, who would scientifically ascertain whether or not manufacturers were doing what was possible, having regard to the nature of the processes and the care bestowed.

Chairman said it was clear from the result of a recent case that sturges were at the mercy of the smoke inspector if the authorities were acute enough to issue their summonses under a certain section of the Act. It seemed to him that in operations where intermittent as necessary the strict enforcement of the Act would result in injustice to manufacturers. As long as there were cold sur-brickwork, smoke must follow when bituminous coal was used, rectifying of vitriol, for instance, on the old intermittent principle or forty fires might be lit up in one works alone every day. True that in conducting this operation the admixture of coke coal had been found to be a very desirable thing, as long as the coke admitted of its use. But in what position would the situation of Manchester be if prosecutions for such fires were upon, for it was too much to hope that such a mixture would smoke at all? With one hand it would take the fines and with the other an increased sum for coke from its gasworks, for the demand would have the inevitable result of raising the price. He was of the opinion that the multiplication of chimneys. One large chimney was more than ten small ones, and aided the diffusion of gases at a higher level.

Mr. Levinstein said that if the Act were properly worked sturges would have no reason to complain. Manufacturers did not want an unlimited licence to turn out black smoke and be a nuisance to their neighbours. They did all they could to diminish the amount of smoke from their chimneys. But it should be understood that there were many operations in which the emission of black smoke could not be prevented, and what they wanted was that the authorities should discriminate between cases in which smoke could be prevented, and cases in which it could not be so easily prevented, and in which it could not be prevented at all.

Grimshaw agreed that there were cases in which black smoke could not be prevented no matter what means were adopted, and sturges should not be called upon to perform the impossible. The present state of appliances might be improved and the present amount of smoke reduced.

Councillor McDougall (who received the recent deputation at Town Hall), on being asked to address the meeting, said his position was such that the Corporation Committee made it impossible for him to take part in the discussion, but he would like to express his gratification that the matter now appeared to be taken up in earnest by the members of the Society.—Dr. Gerland and Mr. J. Hart took part in the discussion.

Mr. Simpson said the Sanitary Association were not so unwise as to put hindrances in the way of manufacturers, but they were in the interests of the public health to ask that manufacturing operations should be carried on with the minimum of smoke. The question here of Manchester was not an agreeable one. No one would live in it who could easily get out of it. It seemed to him that the members of the Society were to devote as much ingenuity to the question as they did to the conduct of their business, some would be hit upon to entirely abolish the nuisance. He did not think in all cases a perfect combustion of the coal was possible, but he was glad to see a confession of failure if the present state of things was the best that could be effected.

Fred Scott (secretary of the Manchester and Salford Sanitary Association) said he was sure a great deal more could be done if manufacturers would go to the necessary expense. He objected to the health always being treated as a secondary matter and commercial interests put in the first place. He was satisfied the members of the Society were doing much to abate the smoke nuisance, and he thought the Society as one of the best allies of the Sanitary Association. He did not think the authorities should be asked to discriminate between one class of manufacture and another. They were bound to enforce the law, and if the law was unjust it was for the manufacturers to get it put right.—Mr. Dreyfus and others afterwards took part in the discussion.

DISADVANTAGES OF HOT FULLING FOR WOOLLEN GOODS.

A foreign Exchange an inquirer recently asked what were the disadvantages of fulling mixed or natural white woollen goods with a temperature of 65° to 70°. The answer given was as follows: Fulling of woollen goods with hot soap is to be avoided under all circumstances, especially at so high a temperature as stated in the question, for if the degrees of heat given apply to Reaumur's scale (112°F.), 70° is only 10° (50°F.) below the boiling point. Supposing, however, that 70°C. (100°F. = 212°F.) are meant, the aspect of the matter is not changed greatly, for, generally speaking, every artificially applied heat is to be avoided as much as possible in the fulling of woollen goods, and, among others, the introduction of steam into the bowls of the fulling machine. This extreme measure is to be resorted to only in very extraordinary cases, when the felting capacity of the wool is very small, and the cloth is, nevertheless, to be felted strongly.

It is true that heat promotes the felting of the animal fibres, but this has its limits, and whenever possible the fuller should be satisfied with the temperature developed by the co-operation of the parts of the machinery, roller, cylinder, etc., and the blow, pressure, and rubbing of the cloth itself. If the cloth is not forced by suitably setting the fulling mill, this heat will be about from 85° to 90°F., and for this reason the cloth should not be moistened with a still hotter soap solution. A soap solution of such a degree of temperature can quite easily cause an unequal formation of felt, because the cloth when moistened will not at once absorb all the hot solution, thus producing a stronger development of felt at the place where it remains in contact for a time than at the other places which have been left cooler. Such a hot solution is more apt to cause a shrinkage of the cloth, and this differs essentially from a felt. For the mixture spoken of in the query, there is the additional danger that the colours will bleed one into the other.

SEWAGE SCHEMES.

STOCKPORT.

DR. CHARLES PORTER, medical officer of health, refers, in a report just presented to the Corporation of Stockport, to the sewage works now in progress and to the means adopted for sewer ventilation. The scheme now being carried out, under the supervision of Mr. A. M. Fowler, M.I.C.E., at a cost of about £100,000, provides for five main intercepting sewers, which are to be ventilated by openings in the carriage way and by shafts on buildings, away from windows. At the outfall works the sewage will be pumped 17 ft. 6 in. into tanks, there treated chemically, and then discharged intermittently upon underdrained and levelled filter beds, through which the effluent thus purified will pass into the river. The Corporation possess 95 acres of land at Heathside Farm, Cheadle, and it is proposed to appropriate by degrees 63 acres for sewage purification, the ground being well adapted, consisting of sharp gravel and sand. Provision is being made at the outfall works to deal with the sewage from upwards of 140,000 persons, the figure at which the engineer estimates the population of Stockport 30 years hence. At present the inhabitants number about 75,000 in the borough. A practical difficulty in the systematic and thorough cleansing of the sewers is, the medical officer understands, the present heavy cost of water.

SANDBACH.

Colonel C. H. Luard, R.E., an inspector of the Local Government Board, held an inquiry at the Sandbach Town Hall, last week, with reference to an application made by the Sandbach Local Authority for permission to borrow £6,000. for the purpose of carrying out important extensions in connection with the sewerage scheme. Amongst those present were the Rev. J. R. Armitstead (vicar), Mr. E. Codling (engineer), Messrs. R. Bygott, A. Stringer (clerk to the new District Council), G. Venables, E. Lea, P. Tomkinson, A. Wood, Buckley, and others. Mr. Codling submitted plans, and it was explained that the system which the District Council proposed to adopt was that known as the International process, this being a system of precipitation by ferozone and subsequent filtration through polarite. The principal works were to be carried out in Giddy Lane and Sandbach Heath, two large outlying districts of Sandbach.—The Rev. J. R. Armitstead said that the work was of pressing necessity in the districts named, but the whole scheme of sewerage really ought to be carried out. However, times were bad, and they intended to do that which was most urgently needed.—Colonel Luard asked what was the existing arrangement?—Mr. Stringer said that at the present time the sewage was running into the streams.—Colonel Luard: And that is very wicked.—The Vicar said the brooks near the Heath were already polluted, so that the sewage they allowed to go in did not affect them much.—Mr. Codling, the engineer, explained that the gradients towards the outfall works would be 1 in 22 to 1 in 675. The sewage, he said, would be brought up to the land and then treated with ferozone. It would then run into a pair of subsidence tanks, where the sludge would be deposited at the bottom of the tanks, and then removed by a perforated revolving arm worked by hydrostatic pressure. The effluent would run off into the filter beds, the filtering medium being polarite, and from there it would pass on to the land and then into the stream. The land was 5 1/3 acres, and the population about 5,000.—Colonel Luard said it seemed to him that they had only just enough land. The Local Government Board orders directed that there should be one acre to 1,000 people.—Mr. Codling said that the water was quite pure and fit for the river.—The Inspector: But it is no good telling me that if the Local Government Board lay down a certain amount of land in ratio to a certain number of people.—Mr. Venables: But the Medical Officer drinks it. (Laughter.)—After further discussion, the inquiry terminated. The land required for the new scheme is on the estate of Lord Houghton, the Lord Lieutenant of Ireland.

MERSEY AND IRWELL JOINT COMMITTEE.

THE usual meeting of this Committee was held on Monday at the offices, Mosley-street, Manchester, Mr. Ald. J. Thompson in the chair. Mr. T. W. Killick submitted the report of the Consulting Sub-committee, in which particulars were given with regard to the sewage works in various places, including Manchester. The Town Clerk of Manchester wrote on 3rd January as follows:—"I am directed to inform you, in reply to your letters of 18th November last and 2nd inst. that the Rivers Committee fully expected that the filter beds at Davy-hulme, 30 acres in extent, would have been completed and in operation by this time. They deeply regret, however, to say that the progress made by the contractor has been very unsatisfactory, and they are compelled to ask the Joint Committee for a further extension of time to enable these works to be completed, when the effluent will be materially improved." The Sub-committee reported that at a meeting of the Joint Committee, held on the 5th November last, a resolution was passed granting a further extension of time to the Corporation of Manchester to determine what necessary further steps they must take in the matter of the efficient treatment of their sewage. This was communicated to the Corporation on the 13th of November, and a reply was received from the Town Clerk on the 3rd inst. As the letter from the Town Clerk did not altogether meet the resolution passed in November, the Sub-committee recommended that the consideration of the position of the Corporation of Manchester be deferred until their next meeting, before which they hoped the Corporation would give the Joint Committee a definite statement as to the means they would adopt to treat the sewage of the whole of the city.

The Chairman said that in view of his position he had some delicacy in referring on the one hand to the action of the Committee, and on the other hand to the work of the Corporation. Still he thought it was quite reasonable that this Committee should require the Corporation to make a definite statement as soon as they could, and he hoped that in a month from now some statement would be furnished. In the meantime, he could assure the Committee that the Corporation were not idle. They were expending money at the works at Davy-hulme at the rate of £10,000 a year. As regards the filtration, circumstances had occurred for which the Committee were not responsible which had made it necessary to suspend the filtration works. The Rivers Committee of the Corporation were doing their utmost to carry out their promise to this Committee and to the ratepayers.

Mr. Groves said that under the most favourable circumstances 30 acres of land would not be sufficient to filter the sewage of the city.

The Chairman: We are quite aware of that.

Dr. Scowcroft expressed the opinion that more indulgence was being shown to Manchester than to other places. Bolton had been prosecuted, Salford was going to be, and he thought Manchester should share the same fate.

The Chairman said he was afraid Manchester would be prosecuted yet. At the same time Manchester was setting as good an example as it could. They were spending half a million on their scheme and £10,000 a year in treating the sewage. But it was to be kept in mind that it was not so easy to manage sewage works as, to use a homely expression, to tumble off a wall.

Mossley, Chadderton, Gorton, and Aspull were granted an extension of time for three months. Crompton was allowed a month in which to make application to the Local Government Board for their consent to a scheme. Hollingworth was allowed two months to obtain the sanction of the Local Government Board. Kearsley, which has received the sanction of the Local Government Board to borrow £2,000 for land, and £13,460 for outfall works, was allowed two months to let the contracts. Farnworth having arranged to turn their effluent into Messrs. Champion's reservoir, the consideration of their position was adjourned. Swinton was allowed two months for alterations at their sewage works. The case of the Hayfield Rural District Council was adjourned for two months. It was decided to take proceedings against the Hyde Corporation. The Chief Inspector reported that on the night of the 6th and morning of the 7th December last, crude sewage was found running into the river from the sewage works belonging to the Corporation. The sub-committee considered this a very bad case indeed, as, after the inspector had first visited the works and seen crude sewage running into the river, he saw the man in charge deliberately go down to the sluice, and after looking at the same, walk away and leave the works.

A report had been submitted to the Committee by Sir Henry Roscoe upon his examination of the effluents from 16 sewage works, of which only two were unsatisfactory—those of Norden and Prestwich urban sanitary authorities. It was decided to write to these authorities requiring them immediately to take steps to improve their effluents.

Mr. Alderman Brierley explained the position of Bury, the time given to the Corporation to complete their works having expired. He said it was not till April that the Corporation received the sanction of the Local Government Board. Since then the work had been pushed

on as rapidly as possible. Contracts to the amount of £30,000 had been let, and two-thirds of the work had been carried out. The remaining contracts would be let as quickly as possible. He did not think anything would be gained by taking further proceedings against the Corporation.

Mr. Killick called attention to the fact that in the Chief Inspector's report it was stated that the outfall works had not yet been commenced. He had not gathered from Mr. Alderman Brierley why this was so.

Mr. Alderman Brierley said he was assured by the engineer that the plans and specifications for letting the contracts were well forward, and that the outfall works would be ready as soon as the sewers. They had only been eight months at work, and the scheme was to cost £100,000.

Mr. Killick thought the matter should go back to the Committee for consideration till next month. He did not think it had been shown that the work had been pushed forward as rapidly as possible.

Mr. V. K. Armitage asked the Chief Inspector if it was likely that the outfall works would be finished as soon as the rest of the scheme.

Mr. Tatton said that as a rule this was the part of a sewage scheme which took longest to do. He should think that in this case it would take twelve months to construct the outfall works.

Mr. Armitage said that being so he would second Mr. Killick's motion.

The motion was adopted.

Mr. John Brierley submitted the report of the Chemical Sub-committee which dealt with the position of a number of manufacturers. In regard to Messrs. Mather, Ormesher and Company, Middleton, the Chief Inspector had laid before the Sub-committee a very bad sample which was found flowing from the tanks belonging to this firm on 18th December last. The sample was composed chiefly of sludge, and was being turned direct into the river instead of being pumped on to the filters.

Mr. Neville said it ought to be understood that the Committee would accept no apology in any case in which sludge was knowingly turned into the river in this way.

It was decided that proceedings should be taken against Messrs. Mather, Ormesher and Company.

This was all the business before the Committee.

THE INDIAN SHELLAC INDUSTRY.

DR. George Watt, Economic Reporter to the Government of India, observes, in a report recently drawn up by him, that within recent years the demands for shell and button lac have far exceeded the supply, so that it may be said that a considerable revival of interest in this peculiarly Indian article of trade has taken place. During the past five years the exports have increased 95 per cent. in value and only 21 per cent. in quantity, and the returns would appear to manifest a steady improvement. But it would be unwise to advance too emphatic assurances, since the history of the trade has often manifested the wildest eccentricities. During the past eighteen years the lowest exports were in 1879-80, viz., 57,335 cwt., valued at 33,490,600 rs., but, as showing the erratic nature of the trade, it may be mentioned the figures for the immediately preceding year were 83,722 cwt., valued at only 2,805,430 rs. Still more puzzling are the returns for 1875-6, viz., 92,915 cwt., valued at 7,291,760 rs.; and of 1876-77, 109,665 cwt., at 4,991,230 rs. It will thus be seen that few articles of Indian export trade manifest more sudden changes than that of lac. To the people of India it might almost be said that the interest in lac lies in the fact that it is collected from wild sources, and that the industry is a positive boon to people in tracts of country that stand greatly in need of such aid. Its encouragement is, therefore, of considerable consequence, though, as compared with other specially India products, it is not of much value. There are twenty-one native lac factories, and one European at Mirzapore, in the North-west Provinces. In Bengal there are thirty-five factories, but, excepting the Cossipore Factory, near Calcutta, they are all small native works. There are, for example, twenty-five native shellac factories in Manbhoom, one in Beerbhoom, one in Palamow, and seven in Lohardugga. These various factories give employment to 2,614 permanent hands, and 1,665 additional ones during the working season.

A SENSIBLE FINE.—At Croydon, recently, T. H. Goodwin, trading as the Danish Dairy Co., was fined £10. and costs for selling margarine without describing it upon the wrapper.

ALUMINIUM SOLDER.—The following is a proposed solder for use with aluminium or aluminium alloys invented by B. I. Roman. Silver, nickel, aluminium, tin, and zinc are mixed in the following proportions:—Silver, 2 per cent.; nickel, 5 per cent.; aluminium, 9 per cent.; tin, 34 per cent.; zinc, 50 per cent. No flux is necessary, and any soldering iron or tool may be used, though one of aluminium is said to be preferable.

THE MELTING-POINTS AND COMPOSITION OF CANDLE MATERIALS.

IN a paper on this subject read before the American Chemical Society, Mr. W. E. Garrigues calls attention to the fact that the so-called melting-point of a fatty substance is obtained in such a variety of ways, and with equally varied results, that the claim of a certain figure for any particular article of commerce is really of little or no value, unless accompanied by a description of the method employed in its determination, which for ordinary trade conditions is hardly feasible.

There is probably no method in common use, even comparatively independent of personal equations and respective laboratory conditions. Those proposed for determining melting-points in capillary tubes, etc., besides being open to these objections, necessitate allowing the fat to harden for many hours before applying the test. Wiley's method for butter fat is both tedious and difficult of manipulation, and, of course, useless for free fatty acids.

The solidifying point, after Dalican, is not infrequently reported as the melting-point of stearic acid candles, and would, if this were the only material employed, be an easy and fairly good solution of the problem; obviously, however, it is valueless for paraffin-wax, and even for many mixtures of the two. The writer believes that any procedure which will quickly give results on all kinds of candle material, the figures capable of being checked by different manipulators, is a much felt want among chemists engaged in such work.

In American oil refineries the melting-point of paraffin is usually determined by immersing the bulb of the thermometer to two-thirds its length in the molten wax, which is then permitted to cool slowly until the first signs of incipient solidification appear on the surface, disregarding that portion in immediate contact with the sides of the dish. The height of the mercury is then read off.

In some works this is slightly varied by drawing the point of a pin across the surface of the melted wax, until a "string" of the latter can be picked up. This is regarded as the melting-point.

A modification of Dalican's method, seemingly capable of universal application to substances solid at ordinary temperatures, was some time ago called to the writer's attention by Mr. Thomas S. Gladding. It consists of observing the temperature at which a fatty substance solidifies while in constant agitation.

The process is conducted by Mr. Gladding in the following manner: Thirty to fifty cc. of the dried sample is placed in a small beaker, the bulb of the thermometer is completely immersed therein, and the glass with its contents twirled continuously in one direction until the mercury stops receding or ascending.

At first it falls rapidly and regularly, but its subsequent behaviour varies with the nature of the substance under examination. With fatty acids there is a rise of from 0.1° to 1° C., averaging about 0.3° for commercial stearic acid; here it remains stationary for about one minute. With paraffin-wax no rise results, but the mercury remains stationary about one half minute and then continues to recede at the rate of 0.1° to 0.2° per minute. The fall prior to reaching this point being much swifter, no difficulty is experienced in noting the exact temperature. With mixtures of stearic acid and paraffin there is great diversity, the observed figures ranging from no rise to one of nearly 4° ; the latter representing a mixture of two-thirds stearic to one-third wax.

Following is a table showing this melting-point of such mixtures of different proportions. The last column gives the action of mercury at the time of solidification:—

	Stearic.	Paraffin.	Melts at	
1.....	100	0	54.6	0.1° rise.
2.....	100	10	53.4	No
3.....	100	20	52.4	" "
4.....	100	30	51.6	" "
5.....	100	40	50.8	0.05° "
6.....	100	50	50.1	0.2° "
7.....	100	60	49.2	0.6° "
8.....	100	70	48.2	0.8° "
9.....	100	80	47.4	2.8° "
10.....	100	90	45.6	0.6° "
11.....	100	100	45.2	0.8° "
12.....	90	100	45.8	No
13.....	80	100	46.3	" "
14.....	70	100	46.9	" "
15.....	60	100	47.3	" "
16.....	50	100	47.9	" "
17.....	40	100	48.6	" "
18.....	30	100	48.9	" "
19.....	20	100	49.6	" "
20.....	10	100	50.4	" "
21.....	0	100	50.8	" "

To check No. 9, the same paraffin was mixed with another sample of stearic and gave:

Stearic.	Paraffin.	Melts at	
100	0	53.1	0.6° rise.
100	20	50.8	0.6° "
100	40	49.0	0.7° "
100	60	46.5	3.6° "
100	80	45.9	3.1° "

These tables were constructed with a view to practical uses, hence, the proportions, as above, instead of even percentages reckoned on the mixture. In candle factories the predominant material is taken as a basis of calculation. Thus, 40 per cent. paraffin means 100 parts stearic acid to 40 parts wax.

The great advantage claimed for this method is the concordance of its results in different hands. The figures obtained are always the same to 0.1° . The only caution necessary is in cases where apparently no rise of the mercury will take place; the twirling motion should be continued until the mass assumes an unbroken white colour and a homogeneous semi-solid consistency. This may take some minutes; then if still no rise occurs, the temperature at which there was a pause to be noted. A few trials with a mixture like No. 9 will make this clear.

The thing to guard against is being deceived by an action of the mercury similar to, say, No. 15. For several minutes before the enormous rise in the former, it almost stops, sinking no faster than after reaching the true point in the latter. The appearance of the substance under examination is, however, vastly different, being in No. 9, coarse, white flakes floating in a clear molten liquid. On continuing the motion, the mass suddenly blends to a solid white, the temperature rising rapidly; the highest point reached being the melting point. On paraffin-wax, the refinery test, previously mentioned, shows about 0.6° C. higher than Gladding's.

Chemists have for some time been aware that a mixture of fatty acids, subjected to distillation with superheated steam, undergoes some change. It is known that a quantity of liquid hydro-carbons is formed, together with a black pitch; also that there is a slight increment in the melting point. Alder Wright ascribes this latter to the possible formation of isoleic acid or stearylactone. A limited investigation by the writer, carried on at a large candle works, is felt to be a small grain added to a rather barren fund of literature on this subject.

An oft occurring mistake in connection with published analyses of candle material, is the omission of the details of manufacture. For instance, to give the average composition of commercial stearic acid, means absolutely nothing when we consider that one manufacturer employs palm oil as a source, while another uses tallow or bone fat. A third both saponifies and distills with steam, while a fourth uses sulphuric acid or presses the fatty acids directly without distillation. It therefore becomes essential to preface any report of this kind with a brief outline of the several stages through which the fatty substances pass.

The fats under consideration here are exclusively tallow and bone-fat. These are saponified in an autoclave under 150 pounds steam pressure and without the aid of any base. All that is of sufficiently good colour is then at once subjected to pressure at ordinary temperature, followed by a second hydraulic pressing, at steam heat. The solid cake of fatty acids thus obtained, needs only to be freed from dirt before being ready for the candle-moulds. The oil expressed hot is permitted to chill, re-pressed cold, and the solid residue again subjected to the hot pressing. This is continuous, the cake from the hot press alone being used in the moulding room.

The dark, fatty acids, from the autoclave, before receiving the above treatment, are subjected to distillation, in copper, with super-heated steam; 16,000 to 18,000 pounds constituting one "run," during which the volume in the still is kept constant by a continuous inflow from the storage tank above.

The distillate is caught in three fractions. The white oil, comprising about four-fifths of the whole, is obtained first. This we will call "first run oil;" it is ready for pressing at once. The hydro-carbons that are formed having, in part at least, a higher boiling-point than the fatty acids, accumulate in the still, and when these begin to come over in quantity sufficient to colour the distillate a decided green, the receptacle is changed. What now comes over we will term "second run oil;" it is returned to the storage tank and re-distilled with the next run.

After a time the distillate again changes colour, becoming darker and more viscid. The operation is then stopped and the contents of the still permitted to cool, subsequently being transferred to a smaller iron still, in which a higher heat can be attained. The fraction obtained here we will designate "green oil." There now remains as a residue a black pitch, called "candle tar."

As will be seen later, from its analysis, the practice of returning this green oil to the storage tank, for re-distillation with other fatty acids, can not be looked upon in any other light than as an adulteration of the red oils, finally obtained, into which it finds its way.

Going back to the autoclave we find little of interest except, perhaps, the degree of perfection attained by this mode of saponifying without

any base. Samples removed after ten, twelve, and fourteen hours' digestion showed respectively 1.74, 1.44, 1.06 per cent. glycerol. The unsaponified fat may be approximately deduced on multiplying these figures by ten.

As might be expected, no change occurred in the constitution of the fat, other than the removal of glycerol. Facilities for trying the effect of higher pressure than 150 pounds were lacking.

Proceeding to the distillation, we find the following changes take place:—

BEFORE DISTILLATION.		AFTER DISTILLATION.	
Melting-point.	Per cent. oleic acid.	Melting-point.	Per cent. oleic acid.
41.5	43.96	44.5	35.06
43.0	44.64	45.5	36.06
43.9	41.67	45.0	34.00

These melting-points are lower than those of the pure fatty acids alone; due in the first column to the presence of neutral glycerides, to the extent of ten to fifteen per cent., and to hydrocarbons from a previous distillation, as before mentioned. Distillation almost eliminates the former, but the hydrocarbons are still there in about the same proportion (*vide infra*).

To determine quantitatively the changes wrought by the high temperature, (about 260° C.,) a run of 16,075 pounds was traced through, and the chemical composition before and after noted, as well as the proportion of the different grades of oil previously named. These figures may be taken as typical, the variation from averages being very small.

The oil had a melting-point of 43.2° C., and contained:—

	Before distillation, per cent.	After distillation, per cent.
Solid acids.....	49.52	50.47
Oleic acid.....	42.86	33.05
Hydrocarbons (liquid).....	6.94	13.14
Glycerol.....	1.37	....
Tar.....	....	2.00
Loss.....	....	1.34
	100.69	100.00

One-half the glycerol found is subtracted, together with oleic acid and hydrocarbons, from 100, to determine the solid acids, since tallow glycerides yield approximately ninety-five per cent. fatty acids, and ten per cent. glycerol.

The percentage yield of the different grades of oil and the constitution of each was:—

First run oil....80.31	Containing: Hydrocarbon.. 6.29 per cent.
Melting-point 44.8	Fatty acids....93.71 "
Second run oil....12.13	Containing: Hydrocarbon..35.90 "
	Fatty acids....64.10 "
Green oil.....4.22	Containing: Hydrocarbon..98.74 "
Tar.....2.00	Fatty acids....1.26 "
Loss.....1.34	
	100.00

Making corrections for the hydrocarbons present before distillation and the glycerol, which forms a large part of the 1.34 per cent. loss, we have as a result of distilling 100 parts of pure fatty acids:

	Before.	After.
Solid acids.....	53.61	54.63
Oleic acids.....	46.39	35.77
Hydrocarbons (liquid).....	—	6.71
Tar.....	—	2.15
Loss.....	—	0.74
	100.00	100.00

It seems reasonably assured, from these figures, that the stearic and palmitic acids distill without change, while the oleic partly splits up into liquid hydrocarbons, tar, and a saturated or non-iodine consuming fatty acid. The nature of this body, though it has not been isolated, will be considered briefly farther on.

From the foregoing facts, it appears to the writer that the present process of manufacture might be advantageously altered by taking the fatty acids directly from the autoclave to the presses—as is done with the light coloured stock—and obtaining a press-cake melting at 55°—56°, which latter is then subjected to distillation. By these means the candle stock would not deteriorate in the still as it now does (*vide infra*), and the formation of valueless—and even for most purposes harmful—hydrocarbons would be avoided, giving the red oils a greater worth.

Practical candle makers find that distilled stock invariably yields a press-cake of lower melting-point than that from the autoclave. This is now explained by the formation of the saturated fatty acid from oleic acid, in the still. This body is sufficiently solid to resist being pressed

out with the oleic acid, yet soft enough to lower the melting-point of its associates—stearic and palmitic. In passing it may be pointed out, as shown by several writers, the lowering of the melting-point of a mixture of two fatty acids by the addition of a third, does not necessitate the latter having a melting-point below that of the two former.

Apart from the evidence already given, its presence is indicated by its low molecular weight, being—probably considerably—under 268, while the mean of stearic and palmitic as occurring in tallow is 271-272. The following tabulated analyses of press-cakes in different stages of completion, illustrated these points:

AUTOClave STOCK.				STILL STOCK		
Melting-point, °C.	Per cent. oleic acid.	Total mean equivalent.	Molecular weight of solid acids.	Per cent. oleic acid.	Total mean equivalent.	Molecular weight of solid acids.
1..51.0	—	—	—	16.69	—	—
2..51.5	21.08	—	—	—	—	—
3..53.6	—	—	—	7.02	—	—
4..53.8	11.57	—	—	—	—	—
5..54.1	9.00	—	—	—	—	—
6..54.3	—	—	—	6.51	269.2	268.3
7..54.4	8.40	—	—	5.51	269.2	268.4
8..54.5	—	—	—	5.96	268.4	267.5
9..54.6	—	—	—	6.00	268.0	267.0
10..54.8	—	—	—	4.99	268.4	267.6
11..54.9	6.60	272.0	271.2	4.16	270.0	268.4
12..55.5	4.37	—	—	—	—	—
13..55.6	4.02	272.0	271.5	—	—	—
14..56.0	3.74	272.8	272.4	—	—	—
15..56.1	3.96	272.0	271.5	—	—	—
16..56.2	3.03	—	—	—	—	—

The average content of neutral glycerides was determined to be 3.90 per cent. in samples 11, 13, 14, 15 from the autoclave, which is offset by an average of 0.17 per cent. hydrocarbons in samples 6 to 11, inclusive, from the still. In calculating the mean equivalents, no corrections were made for these in either case. The method of determination was; boiling with an excess of alcoholic potash and back titrating.

To sum up, it appears that when oleic acid is distilled in an atmosphere of steam, the distillate contains, besides unaltered oleic acid, hydrocarbons—liquid, and mainly of high boiling-point—and one or more fatty acids, not isomerides of oleic, having a considerably higher melting-point and lower mean equivalent than the latter, and differing therefrom in not forming addition products with iodine. A black pitch remains as a residue in the still.

EXPORTS OF ALKALI AND BLEACH.

THE following figures, which are taken from the official foreign and colonial statistics of the United Kingdom, give the amount and value of alkali and bleaching materials shipped to the undermentioned countries during the month of November, 1894, as compared with the same month of 1893:—

ALKALI.				
Port.	1893.	1894.	1893.	1894.
	Cwts.	Cwts.	£	£
Russia.....	11,838	14,286	4,782	4,949
Sweden and Norway....	17,041	19,893	4,104	4,084
Germany.....	14,648	7,683	4,411	2,029
Holland.....	8,768	8,549	1,602	1,781
France.....	1,485	3,251	627	1,143
Spain and Canaries.....	15,907	29,687	7,038	10,497
Italy.....	14,913	19,512	4,882	6,263
United States.....	294,247	465,231	76,591	97,862
Australasia.....	13,908	10,194	4,330	3,708
British North America..	21,618	43,196	6,155	9,888
Other countries.....	62,641	99,544	20,118	29,722
Total.....	477,014	721,026	134,640	174,928

BLEACHING POWDER, ETC.				
Port.	1893.	1894.	1893.	1894.
	Cwts.	Cwts.	£	£
United States.....	27,808	83,687	11,976	32,262
Other countries.....	40,939	46,772	16,599	17,392
Total.....	68,747	130,459	28,575	49,654

DETECTING SOAP IN LUBRICANTS.

ACCORDING to Dr. H. Schweitzer, of New York, a reaction has been discovered which obviates the hitherto uncertain determinations as to the presence of soap in fats and oils. The theory that metaphosphoric acid is soluble in absolved alcohol or in ether, and of the insolubility of the metaphosphoric acid salts of alkalies and alkaline earths in a like solution forms the foundation of the discovery; and the desired results are obtained by intermixing a solution of fat, oil, or wax in benzine or ether, with a saturated solution of metaphosphoric acid in sulphuric ether or absolved alcohol. The chemical action of the solvent through the decomposition of any particles of soap that may have existed produces a fine precipitate of metaphosphoric acid salt. Should there be a precipitation of ozokerite or other like substance, produced through the use of alcohol, the solutions of both fat and solvent should be made ethereal. This reaction is regarded as very sharp, and is perfectly reliable when used upon such oils as cod liver, lanoline, and fish oil, as the substances of these oils, aside from the fatty matter, give no precipitation when brought in contact with the reagent. The solvent of metaphosphoric acid in absolved alcohol is produced by shaking pulverized metaphosphoric acid and alcohol well together and then allowing them to stand for some time, after which the clear liquid is drawn off and forms the new reagent ready for use. Tests have been made in which gelatine formed a feature to the extent of 10 g. gelatine (solution of 10 per cent. alumina soap in paraffin oil), in 100 cc. of benzene. By adding a solution of chloride of platinum alcohol after the precipitate has formed, the reaction will aid in defining the nature of the soap acted upon. Should the precipitate become crystalline, potash is present; if it dissolves, there is sodium, calcium, or magnesium. There is an indication of the presence of aluminium or iron salts when no change occurs in the precipitate.

THE PETROLEUM DUTY IN CEYLON.

UNITED STATES CONSUL William Morley, of Ceylon, India, in a report to the State Department, directs some caustic criticism at the Colonial Government for its action in maintaining a prohibitory duty on American kerosene.

"I feel prompted by local developments," he says, "to make a special report on this subject, more especially as the kerosene product was, up to the year 1892, the only article of considerable importance imported here from the United States as an offset to upwards of £400,000. worth of Ceylon products exported yearly into the United States.

"My first report on kerosene oil was dated May 11th, 1881, when the import here amounted to 56,000 gallons per annum. The quantity increased yearly until 1887, when it amounted to 54,000 cases, or 432,000 gallons, all coming from the United States, either direct or *via* Bombay. In the meantime (in 1884) the local Legislature imposed an import duty on kerosene of 6½ per cent. *ad valorem*, against my protests, and in an unlooked-for manner on the part of the Governor, Sir Arthur Gordon, who had assured me, both verbally and in writing, that my opinions and representations on the subject would be laid before the executive and legislative councils for consideration—a promise that was never carried out.

"The imposition of this duty was also opposed by the local mercantile community, the Chamber of Commerce denying its necessity for revenue purposes, and expressing a wish that the Government would desist from the project.

"In 1888 the trade in Russian oil began, and in 1893 the import from Russia was 160,436 gallons, and none from the United States. In the meantime, in 1892, the duty was raised to 25 cents, or a rupee, per gallon, equivalent to 50 per cent. *ad valorem*.

"An installation for storing kerosene in bulk, with a present capacity of 400,000 gallons, is now in process of construction in Colombo, which, when ready for use, will probably render impracticable the importation of case oil here. That the installation scheme will prove a great success there is no doubt, for it has much Government patronage.

"I think I am justified in directing attention to the fact that in 1884 no consideration was shown by the Government of that period to the United States when a duty of 6½ per cent. was put upon the only American product of much consequence sent here, to the value of, perhaps, \$50,000 per annum, the same duty being increased in 1892 to 50 per cent. *ad valorem*, though at the same time we were admitting free of duty into the United States nearly every Ceylon product, the value of which in some years amounted to over \$2,000,000. Whereas, this year (1894) the Government is unusually kind and obliging toward kerosene oil interests that are purely Russian."—*Oil, Paint, and Drug Reporter*.

THE DYERS' COMBINATION.

AN agreement has been arrived at between Messrs. Grandage and Company, the principal firm among the outside dyers, and the operatives' secretary, acting with the assent of the Dyers' Combination. It is as follows:—(1) That in the engagement of new men applications shall be made to the Dyers' Society, 9, Barry-street, Bradford, W. Grandage and Company being at liberty to select from those sent in one more that may suit their requirements, and the firm agree to advise the Society of the dismissal of any workman and the reason thereof. (2) That in cases where William Grandage and Company are paying less than the standard rate of wages they agree to advance such wages up to the standard at once and maintain such rate during the existence of this agreement. (3) That all the workmen employed by Messrs. Grandage and Company previous to November 9, 1894, shall return to their occupations as soon as the requirements of the firm shall allow, without prejudice to their connection or action with the union. (4) That in the event of this agreement leading to an amicable settlement of the present dispute W. Grandage and Company agree to meet in conference representatives of the Piece Dyers' Combination and representatives of the outside dyers to discuss and arrange for the association of all the masters in the piece dyeing trade to secure concerted action and protection of the interests of its members.—Addendum: The carrying out of this agreement to be substituted for previous demands. (Signed) W. Grandage and Company. Joseph Hayhurst.—The last clause of the agreement is the all-important one, inasmuch as it suggests that there is a willingness on both sides to re-open the question of the methods which may legitimately and properly be employed by a trade combination. Neither party makes any abandonment of its position, except in so far as the demand for a 5 per cent. bonus on wages originally made by the men to bring the firm into accord with the new methods of the Combination is withdrawn; and it is entirely a question for the suggested conference as to whether the Combination should be strengthened or weakened.

Trade Notes.

UNIVERSITY COLLEGE OF ABERYSTWITH.—Lord Tredegar has intimated to the Registrar his intention to contribute £300. towards the building fund of this college.

THE ADULTERATION OF CEMENT.—A movement is on foot for preventing the adulteration of cement, the promoters of which have instructed eminent experts, not themselves cement manufacturers, to make exhaustive inquiries into the extent to which the introduction of Kentish rag and other materials into the manufacture of Portland cement may be found to prevail, and as to their effect on the quality of that article.

TECHNICAL INSTRUCTION IN FLINTSHIRE.—Mr. P. Mostyn Williams, organising secretary of the various technical classes under the control of the Flintshire County Council, has issued his report on the work done in the years 1893-94. He reports that the technical instruction carried on in the county continues to flourish; and though some of the centres showed signs of apathy, he believed, with the near approach of the establishment of intermediate schools, a new life would be imparted into every district. The total number of pupils last year was 1,290, against 1,344 in the previous year. With regard to the instruction in dairy work, Mr. Williams states that the Llewenni Dairy School, worked conjointly by the Flintshire and Denbighshire County Councils, was not opened till August 1, 1894; but from May 1 to the end of July a travelling dairy visited various centres and did good work.

ZINC IN MOLASSES.—The adulteration of New Orleans molasses with sulphate of zinc is again attracting attention. The same question has been brought before the trade in various forms within the past ten years, but reports from various sections of the country now indicate a more vigorous investigation of the methods being practised in New Orleans and other shippers. According to a member of the New York trade, nearly 95 per cent. of the molasses received in this market is adulterated, but on the other hand it is explained that it is hard to sell straight goods, and that molasses is brightened so that it will sell more rapidly. It is denied that the introduction of sulphate of zinc is injurious, and to substantiate this, several houses that deal in large quantities of molasses contend that zinc not only brightens the goods but purifies it. At any rate, the proportion of zinc used, they say, is so small that it is harmless. It is claimed for the zinc that it has peculiar properties which cause all foreign matter to rise to the surface as a scum, which is then cleared off and the molasses is left a pure amber colour. The fact that molasses is "bleached" in order to compete with New Orleans wholesalers is freely admitted in the local trade.

MESSRS. G. G. BLACKWELL, SONS AND CO.—We are informed that this firm has opened offices in London at 4, St. Mary Axe, E.C. The management of this new office has been entrusted to the junior partner in the firm, Mr. Geo. G. Blackwell, jun.

THE SHARON CHEMICAL COMPANY, LIMITED.—The directors of this company consider that the result of the operations of the company for the last six months justify the declaration of an interim dividend at the rate of 5 per cent. per annum for that period, the same as was paid for the first half of the year.

PRODUCTION OF BRIQUETTES IN BELGIUM.—There were produced in Belgium in 1893 from 36 works 1,256,265 tons of briquettes, not including the production of small *boulets* for domestic use. The total value was 14,185,200 francs or 11'29 francs a ton. In 1892 the production was 1,146,480 tons.

ANOTHER PETROLEUM LAMP FATALITY.—The East Lancashire Coroner has received information of the shocking death of an aged spinster named Ellen Riley of Enfield. Deceased lived alone in a cottage, and as she did not make her appearance on Wednesday of last week her brother broke open the door, and found her lying on the bedroom floor burned to death, with a broken paraffin lamp by her side. It is thought she fell on New Year's night and set herself on fire.

SHIP CANAL AND THE WOOD PULP TRADE.—Nearly all the pulp consumed by the paper mills in the Lancashire district formerly came through Fleetwood and Liverpool, but this trade is now being steadily diverted from these ports to Manchester, owing to this being a better centre for distribution. The quantity imported direct to this city during the month of December was 32,436 bales, practically doubling the best previous month's record for the port, and comparing very favourably with the 7,322 bales imported into Liverpool during the same period. Bales of wood pulp from Norway and Sweden weigh 4 cwt. and 2½ cwt., partly "air-dry" and partly containing 50 per cent of moisture.

ANOTHER USE FOR SODIUM SILICATE.—An exchange says the best paint for floors is a coating of soluble glass, which not only makes them easy to clean, but also more durable than unpainted floors. Before painting, the floor must be well cleaned and the cracks filled with a mixture of powdered chalk and soluble glass. When the floor is thus prepared it is coated first with a 66° B. solution of soluble glass, of the desired shade, if it is to receive a coloured coat. Soluble glass paints can be purchased, but are not difficult to prepare, due care being taken to use only mineral colours, as others are attacked by the alkalis. The shade must be lighter than that desired, as these colours darken on drying. They dry quickly, and several coats can be put on in a few hours. This paint is very durable, and does not show much wear even on floors that are much used. It is also a fire-proof paint, and protects the wood as far as any paint can. For stores, workshops, halls, etc., in fact, almost all uncarpeted floors, it is well adapted.

Market Reports.

LIVERPOOL MINERAL MARKET.

The Christmas and New Year holidays being pretty well over, many of the works which were stopped during that time have resumed operations, and consequently there is more inquiry for minerals generally. Manganese continues steady without alteration, and sales have been made at the last quotations. Ground has been moving freely at £6. to £12. 10s., according to quality. Manganiferous iron ore is unchanged. Bauxite, Irish Hill brand, continues in increased demand, and prices are firm, with steady sales, with every prospect of an advance owing to the increased manufacture of aluminium from this base. Chrome ore: There are no arrivals to report this week, whilst spot stocks are perfectly clear, and consequently with the strong demand prices have stiffened: 40% at 65s. to 70s., 50% at 110s. to 115s. French chalk: Arrivals are practically nil, whilst stocks have been materially reduced. There is an increased demand, owing to manufacturers having run their stocks low, and prices are firm where deliveries have not been made on contract; "Angel White" and "Gold Medal" brands at 75s. to 110s. per ton. Barytes: Lump carbonate of good quality is scarce; smalls at 70s. to 85s.; lamp, 90/95%, at 100s. Sulphate: There is a good demand, and prices are firm at 55s. to 80s. for ground. Wolfram and scheelite are unchanged. Ferro tungsten is unchanged at 1s. 9d. to 2s. per lb. Strontia sulphate is firmer. Plumbago, for foundry purposes, £5. to £6. per ton; better qualities, £8. to £10. per ton. Irish moss steady at £8. 10s. to £12. 10s. Arsenic is still scarce at £15. to £16. per ton. Ochre, "J.C." 60s. to 65s.; other brands according to quality; Devonshire, Welsh, etc., 50s. to 100s. Fullers earth: ground, a fair business is doing at 80s. to 100s.; lump, 60s. to 70s.

TAR AND AMMONIA PRODUCTS.

Benzol keeps in the prevailing state of depression, with 90's at 1s., and 50 90's 1s. 0½d. Carbolic acid is steady, crude, 60%, being quoted 1s. 8d., and 40% crystals 5¼d. Crude naphtha unchanged at 5d. Solvent keeps steady at 1s. 2½d. Anthracene is firm at combination values. Creosote is slightly easier. Pitch cheaper at 36s. 6d., and forward 33s. 6d., f.o.b. East Coast.

Sulphate of ammonia is a shade better as regards the tone of the market, and the downward course seems to have been somewhat arrested. Nominal value at all ports is £10. 12s. 6d. It is reported that sales have taken place at £10. 15s. to £10. 12s. 6d., the latter figure having been accepted at Leith.

REPORT ON MANURE MATERIAL.

The market is still quiet, manure makers showing very little disposition to cover their requirements further, and any alteration in prices is rather in favour of buyers.

The quotation for 75/80% Florida phosphate rock, 1895 steamer shipment, is still 7¾d. per unit in cargoes c.f.i. to United Kingdom, but 7½d. is probably nearest value. The value of South Carolina River rock and of 60/65% Algerian is about 6¼d. per unit c.f.i. Peace River rock, being scarce, is worth ¼d. per unit more. We do not hear of any business in River Plate bones. The nominal value of anything afloat is about £4. 10s., but this price would hardly be obtainable for shipment. Crushed Kurrachee bones offer, for shipment, at £4. 12s. 6d. per ton without finding buyers; £4. 10s. has again been accepted for Bombay bone meal, January-February steamer shipment, but £4. 12s. 6d. would have to be paid for parcels afloat, and £4. 15s. for anything on spot. The value of common grinding bones is £4. 5s. to £4. 7s. 6d. per ton, according to quality and condition.

Nitrate of soda is unchanged. On spot ordinary quality is selling at 8s. 9d. per cwt., and fine quality at 8s. 10½d., but 9s. would have to be paid for refined. Due cargoes are worth about 8s. 10½d. per cwt.

THE METAL MARKET.

LONDON, WEDNESDAY.—Fig iron, dull: Scotch warrants closed at 41s. 8½d., Middlesbrough 34s. 9½d. cash, and hematite 42s. 11d. Copper, quiet: Chili bars, G. O. B.'s and G. M. B.'s, closed at £40. 8s. 9d. to £40. 13s. 9d. cash, and £40. 15s. 0d. to £41. 0s. 0d. three months. Tin, quiet: Straits closed at £60. 2s. 6d. to £60. 12s. 6d. cash, and £60. 2s. 6d. to £60. 12s. 6d. three months; Australian, £60. 5s. 0d. to £60. 7s. 6d.; English ingots, £63. 10s. 0d. Lead, steady: Spanish, £9. 12s. 6d.; to £9. 13s. 9d.: English, £9. 13s. 9d. to £9. 15s. Silesian spelter, ordinary: £14. 7s. 6d.; Nickel, 1s. 3½d. Antimony, £30 0s. Quicksilver: first hands, £6. 12s. 6d.; second hands, £6. 11s. 6d. Copper shares, quiet: Cape, 1½ to 1¾; Copiapo, 1¾ to 1¾; Libiola, 3¼ to 3½; Mason and Barry, 1½ to 1¾; Rio Tinto, 14½ to 14½; Tharsis, 4¾ to 4¾.

MISCELLANEOUS CHEMICAL MARKET.

Business is generally more brisk in the alkali trade, especially for export. In soda ash there is practically no change to report during the week, 58% alkali in casks, f.o.b., £3. 17s. 6d. to £4., and 100% makers' works, in bags, £3. 7s. 6d. per ton. Leblanc ash, 1d. to 1¼d. per degree, f.o.b. Bleaching powder is selling steadily at £7. 2s. 6d. to £7. 5s. per ton, f.o.r. makers' works, and £7. 7s. 6d. to £7. 10s., f.o.b. Liverpool. There are some lower special quotations for this article for export for certain specified markets. Caustic soda is a better market, demand for export being much more active: current quotations on the spot are as follows:—f.o.b. Tyne, 77%, £10.; f.o.b. Liverpool, 74%, £8. 17s. 6d.; 70%, £7. 17s. 6d.; 60%, £6. 17s. 6d. nett per ton, 10-ton lots and upwards. In chlorate of potash and soda position and price is still unaltered, 5¼d. and 7½d. per lb. respectively being quotations on the spot. Nitrate of soda rather stronger, and better prices are being realised: £8. 15s. to £9. is value to-day. Acetates generally are unchanged: soda is in slightly better demand, and price remains moderately firm at £14. 10s. to £15., c.i.f.: brown acetate of lime is slightly easier for spot and forward delivery at £5. 17s. 6d. to £6. per ton. Foreign sugar of lead dull at £24., c.i.f. Borax is still offering at low rates without much business resulting: present prices range from £18. 10s. to £20., according to quality. Potash, caustic and carbonate, moves freely at former prices. Carbolic acid, crude, is firm, and there is an upward tendency in price; crystal, however, does not improve, and there are still sellers at very low rates.

THE COPPER MARKET.

Messrs. Harrington and Co., in their fortnightly report, dated Liverpool, January 3rd, 1895, state:—

Chili Charters for second half of December are advised as 900 tons. Exchange, 13½d.

Since our last the market for G.m.b.'s has been fairly active, notwithstanding the holidays, about 4,000 tons being sold at prices varying from £41. 7s. 6d. cash and £41. 15s. three months, down to £40. 13s. 9d. and £41. 1s. 3d. respectively, closing steady to day at the lowest.

The total stocks in Liverpool, Swansea, London, and Havre are 50,764 tons, against 49,276 tons on the 18th ult., showing an increase of 1,488 tons for the fortnight, which, with a decrease for the previous fortnight of 369 tons, makes the increase for the month 1,119 tons. The stocks include about 1,800 tons of copper sold, but not yet delivered to smelters. The visible supply for the fortnight is 54,683 tons, against 52,741 tons on the 18th ult., showing an increase of 1,942 tons. The month's figures show an increase of 2,285 tons. Refined and manufactured sorts are quiet. Quotations being:—Tough cake, £43. to £43. 5s.; best select, £43. 15s. to £44. 5s.; Indian sheets, £48. to £48. 10s.; strong sheets, £51. 10s., and yellow metal sheets, 4 3-16d. to 4¼ per lb.

The sales of furnace material comprise:—21 tons Cuban precipitate, at 8s.; 36 tons Chili copper ore, at 7s. 10½d.; 33 tons Spanish precipitate, at 8s. 4½d., and 50 tons Mexican ore, at 8s. per unit.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil is dull with very little business doing, small sales have been made in Accra at £20 transit. Olive is rather better as regards the amount of business doing, and prices are steady. Linseed keeps steady in price at 21s. to 21s. 6d. per cwt. for Liverpool makes in export casks, and there is a firmer feeling in the market. Cottonseed continues steady at 18s. 3d. to 19s. for Liverpool refined and 19s. per cwt. for American. Castor oil, though quiet, keeps steady at 2½d. per lb. for good seconds Calcutta, and 2½d. to 2¾d. per lb. for first pressure French. Tallow remains virtually unchanged in price or position. Resin continues to fetch full values, but there is less business doing owing to the prices ruling being rather high. Spirits of turpentine are firmer, American now meeting with a good inquiry at 21s. per cwt. Mexican is nominally quoted 19s. 6d. per cwt. Petroleum is steady and in fairly good request at 4½d. to 5¼d. per gallon for American, and 4d. per gallon for Russian refined.

COLOURS are steady, without alteration in prices. Ochres: Oxfordshire, common, £10., medium, £12., best, £15.; Derbyshire, common, 40s.; medium, 50s., best, 60s.; Welsh, best, 90s., seconds, 50s., and common, 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Umber: Turkish quiet; Devonshire, 50s. to 55s. White lead, £16. Red lead unchanged. Venetian red, £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2, 2s. 6d. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide, £22. 10s. to £25.

TYNE CHEMICAL REPORT.

TUESDAY.

In the chemical trade the position is unaltered, and the large works on the Tyne have not yet resumed work. There is no alteration in prices generally.

Bleaching Powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, nett; caustic soda, 76/77%, £9. 15s. per ton, nett; do., 70%, £8. per ton, nett; recovered sulphur, 2 cwt. bags, £4. per ton, nett. Soda ash, 48%, £3. 15s. per ton, nett; do., 52%, £4. 2s. 6d. per ton, nett; do., 56%, £4. 10s. per ton, nett; alkali, 36%, £2. 15s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. 15s. per ton, nett; do., 52%, £5. 5s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £5. per ton, nett; do., 1 cwt. kegs, £5. 10s. per ton, nett; silicate of soda, 75° Tw., £2. 17s. 6d. per ton, nett; do., 100° Tw., £3. 12s. 6d. per ton, nett; do., 140° Tw., £4. per ton, nett; soda crystals, casks, £1. 16s. 6d. per ton, nett, gross weight; do., 2 cwt. bags, £1. 16s. 6d. per ton, nett; chlorate of potash, 5½d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £4. 2s. 6d. per ton, nett; blanc fixe, £7. 10s. per ton, nett; chloride of barium, £7. 10s. per ton, nett; carbonate of alumina, £28. 15s. per ton, nett; aluminate of soda, £33. 15s. per ton, nett; in 5 ton lots, £28. 10s. per ton, nett.

SALT continues fairly steady, at 9s. 6d. per ton, f.o.b. Tees.

COALS.—The demand for gas and household coals is somewhat stronger, but as there is a fuller supply owing to increased output at the collieries, there is no practical alteration in prices. Best Northumbrian steam, 9s. to 9s. 3d. per ton; second qualities do., 8s. to 8s. 3d. per ton; small steam, 3s. to 3s. 3d. per ton; household coals vary from 10s. 6d. to 12s. per ton; gas coals, 7s. to 7s. 9d. per ton; coke unchanged, 14s. 6d. to 15s. 6d. per ton.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

The registered tonnage entering the port during 1894 was 3,381,443 tons, being an increase of 407,933 tons upon 1893, and 98,563 tons upon 1892.

OILS.—The import of linseed for the last two weeks is 18,264 qrs., viz., from the Black Sea, 10,261 quarters; Riga, 4,152 qrs.; Libau, 2,601 qrs.; and Ismia, 240 qrs. Linseed oil remains firm at 19s. 4½d. to 19s. 6d., spot naked; January-April 19s. 4½d., and May-August 19s. Boiled ditto, pale, 25s. per ton extra; ordinary, 20s. per ton extra. Casks, 17s. 6d., and ordinary barrels 25s. per ton extra. Export for the fortnight amounted to 1,620 cwt. The stocks of linseed in Hull on the 31st ult., amounted to about 69,000 qrs., 50,000 of which being in crushers hands. The imports of cottonseed during the fortnight have been 2,989 tons. Refined cotton oil steady, at 16s. 3d. naked spot; Jan.-April worth 16s. 6d., and May-August quoted 17s. 3d. Crude ditto, naked spot, 14s. 6d. Export of refined during the last fortnight were 7,300 cwt. The stocks of seed in Hull, on the 31st ult. were about 12,500 tons. Rape oil still remains unchanged, the stocks of seed in Hull on the 31st ult. being 30,000 qrs. Olive oil from £31. to £38. per ton. Tallow, town melted, £25. 10s. per ton. Vegeline, a new vegetable butter, white, sweet, and neutral, for culinary and confectionery purposes, £30. per ton. Cod oil quiet, £16 to £18 per ton. Turpentine remains about the same. Soft soap, 14s. 6d. per cwt. Sod oil, for curriers, &c., £15. to £22. per ton. Boiled drying oil £13. per ton. Engine and cylinder oils from £12. to £24. per ton.

CAKES.—Linseed cakes remain quiet, 95% pure, £6. 7s. 6d. to £6 10s. per ton. Oil cakes, £5. 7s. 6d. to £5. 10s.; Russians, £6. 5s. to £6. 10s. Cotton cakes, orders not plentiful; tone quiet; best makes, £3. 10s. to £3. 12s. 6d.; seconds, £3. 7s. 6d. to £3. 10s. Rape cakes unchanged.

PAINTS.—Manufacturers are beginning to be busy again, there being a good few enquiries for export. Prices are: Venetian red from £3. 15s., and red oxide, dry, from £7. to £18. per ton. Blue black, dry, £4., and yellow ochre, dry, £3. 15s. per ton. Venetian red, black, yellow ochre, blue, green, and red oxide paints can be bought from £12. per ton. Leads are a trifle easier. Paint remover, from 25s. to 30s. per cwt. Black varnish, £5. 10s. per ton, f.o.b. in barrels. Oak varnish, from 5s. 6d. per gallon.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

The first of the works are little more than started after the holidays, and the interruption to selling and buying business, though shorter of duration than the actual production as a rule, is hardly quite over yet, but is nevertheless rapidly resuming normal conditions, on, it is true, a very idle market.

The only exception to the above is found in the section of burning oil, now at the height of the season's consumption; and in this the works could barely afford a stoppage of two days altogether, deliveries ex contracts being still in arrears, and a very considerable remainder yet to overtake. This oil in re-sellers' hands for wholesale buying commands a fraction over the contract terms of the makers as given below.

Stocks of sulphate of ammonia are getting into rather unpleasant bulk, in the absence of all buying activity, and the procurable value steadily decreases. Prompt terms are now down to £10. 15s., though not all of the makers are yet reduced quite to that mark, and £10 16s. 3d. would be pretty generally taken if offers at that were going. Buyers are calculating on a further fall.

In general chemicals, there are no special changes worth recording here, but if there is any movement it is downward.

Chief prices current are:—Soda crystals, 35s. nett, Tyne; soda ash, 48/52°, £3. 17s. 6d. to £4. 5s. nett, Tyne; white alkali, 48/52°, £4. 10s. to £5. 5s. nett, Tyne; alum in lump, £5. 10s. nett, Glasgow; caustic soda, white, 74° £9. 2s. 6d., 70/72° £8. 2s. 6d., 60/62° £7. 2s. 6d., and cream 60/62° £7., all nett, Liverpool; bleaching powder, £7. 5s., nett, Tyne; saltcake, 17s. 6d.; borax, English refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks £6. 10s., and 1 cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow);

chlorate of potash, $5\frac{1}{4}$ d. less 5%, Liverpool; nitrate of soda, 8s. 9d. to 8s. 10 $\frac{1}{2}$ d.; sulphate of ammonia, £10. 15s. to £10. 17s. 6d. prompt, f.o.b. Leith; sal-ammoniac, first and second white, £39. and £37. nett, any port; sulphate of copper, £15. 10s. less 5%, Liverpool; paraffin scale, hard $1\frac{1}{4}$ d.; soft, $1\frac{3}{4}$ d. to 2d. per lb.; paraffin wax 120° semi-refined, $2\frac{1}{2}$ d.; paraffin spirit (naphtha), 7d. per gallon; paraffin oil (burning), standard No. 1 grade, $4\frac{3}{4}$ d. at works, for Scotch buyers (English sales, $\frac{1}{2}$ d. to $\frac{3}{4}$ d. lower); ditto (lubricating) 86° £4. 5s.; 88° £4. 10s., and 890/895° £5. to £5. 10s. Week's imports of sugar at Greenock were 16,000 bags cane unrefined, 13,600 bags beet unrefined, and 100 bags beet refined.

New Companies.

Bovey Pottery Company, Ltd.—CAPITAL £21,000., in £10. shares. This company has been formed to manufacture deal and sell in pottery, glass, china, earthenware, fire and other bricks, pottery ware, lignite, ochre, umber, &c.

Atherton Drug Co., Ltd.—CAPITAL £2,000., in £1. shares. This company has been formed to acquire and carry on the business of a druggist and vendor of patent medicines, now carried on by Henry Atherton, at 9, Market-street, Wigan, under the firm of the Wigan Drug Stores. Registered office, 1, Commercial Yard, Wigan.

James Brodie, Ltd.—CAPITAL, £10,000., in £5. shares. This company has been formed to acquire and carry on the business of brick and tile manufacturers, carried on at Sanquhar, Dumfries, under style of James Brodie. The subscribers to the memorandum of association are: J. Brodie, Heath Royd, Ilkley, vinegar brewer; W. L. Brodie, Meadow Bank, Ilkley, gentleman; D. M. Brodie, Sanquhar, Dumfries; J. Brodie, Heath Royd, Ilkley, cashier; A. Brodie, Heath Royd, Ilkley, widow; A. E. Brodie, Heath Royd, Ilkley, spinster; I. F. Smith, Heath Royd, Ilkley, spinster.

Woolston Brick and Tile Co., Ltd.—CAPITAL, £12,500., in £1. shares, 5,000 of which are preference. This company has been formed to acquire and carry on the business of brick and tile manufacturers, now carried on at Woolston, near Warrington, Cheshire, under the style of The Woolston Brick and Tile Company. The subscribers to the memorandum of association are: F. Lockyer, Statham, Lymn, licensed victualler; J. Lewis, Warrington, contractor; R. Crompton, Warrington, cashier; G. W. Raby, Eccles, joiner; J. Marks, Stockton Heath, bricklayer; R. A. Speke, 61, Chancery-lane, W.C., share broker; J. H. Allinson, Southport, actuary.

Furnivals, Ltd.—CAPITAL £20,000., in £10. shares. This company has been formed to acquire and carry on the business of earthenware manufacturers, flint millers, and dealers in potters' materials, now carried on by Thomas Furnival, G. B. Furnival, and A. Furnival, at Cobridge, Burslem, and at Vale Mill, Hanley, under the style of Furnivals. The subscribers to the memorandum of association are: T. Furnival, 1, Tan-yr-allt, Coolach-road, Llandudno, potter; S. B. Furnival, Stoke-upon-Trent, potter; A. Furnival, Basford, Stoke-upon-Trent, potter; H. Furnival, Llandudno, married woman; M. A. Furnival, Llandudno, married woman; S. Furnival, Basford, married woman; A. C. Bowiner, Hanley, accountant.

E. and A. Miles, Ltd.—CAPITAL £80,000., in £5. shares. This company has been formed to acquire the business of E. and A. Miles, Guildford; the business carried on by the Cranleigh Brick and Terra Cotta Co., at Cranleigh; and the business carried on at Rydes-hill, Worpleston, under the style of timber merchants, sawmill proprietors, and timber growers, and dealers in all kinds of bricks, tiles, and terra cotta. The subscribers to the memorandum of association are:—E.

Miles, Onslow-street, Guildford, timber merchant; A. Miles, Onslow-street, Guildford, timber merchant; A. Miles, Onslow-street, Guildford, manager; J. W. Darke, Onslow-street, Guildford, cabinet maker; F. J. Bonner, Guildford, engineer; E. Miles, Guildford, married woman; H. Miles, Guildford, widow.

Andrews' Foreign Syndicate, Ltd.—CAPITAL £4,000., in £1. shares. This company has been formed to adopt an agreement, dated December 7, 1894, between J. D. F. Andrews of the first part, J. C. B. Andrews of the second part, and the Company of the third part, and to acquire and deal with the patented invention of the said J. D. F. Andrews and J. C. B. Andrews for improvements in electric conductors and joints therefor for electric lighting.

Anthydor Compound and General Paint Co., Limited.—CAPITAL £10,000., in shares of £1. each. This Company has been formed to trade as manufacturers and dealers in paints, colours, varnishes, etc. The subscribers to the memorandum of association are: E. E. Hill, 4, Chatham-road, South Woodford; E. A. Longly, 8, Tachbrook-street, S.W.; F. W. F. Oelrichs, 113, Camberwell New-road, S.E.; C. E. Rond, East Dulwich, clerk; J. Bell, Anerley, S.E., clerk; A. L. Behrens, 26, Linden-grove, S.E., cashier; W. A. C. Waller, Stamford-hill, N., secretary.

The Patent List.

This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

Preparing Hydrochloric Acid from Chlorine and Hydrobromic Acid from Bromine. R. O. Lorenz. 25,073. December 26.
Producing Zinc and Lead by the Electrolysis of the Fused Chlorides. R. O. Lorenz. 25,074. December 26.
Treating Sewage and Waste Waters. T. Craig (of the firm of J. Holden and Sons) and A. E. Raper. 25,110. December 27.
Electrolytic Production of Copper. J. C. Mewburn. 25,145. December 27.
Explosives. M. Reuland. 25,151. December 27.
Treating Coal, &c., to obtain Ammonia, &c. J. Meikle. 25,173. Dec. 28.
Producing Chemically Pure Carbon. A. Schmölke. 25,223. December 28.
Manufacture of Toluene-sulphochlorides. H. Imray. 25,273. Dec. 30.
Composition for Destroying Phylloxera. J. V. Johnson. 25,295. Dec. 30.
Extracting Antimony and other Metals from Antimony Ores. H. R. Angel. 25,321. December 31.
Treatment of Drying Oils. E. Andreoli. 25,324. December 31.
Improvements in Disintegrators. F. Candy. 25,325. December 31.
Soap Moulding and Pressing Machines. W. L. Wise. 25,332. Dec. 31.
Manufacture of Soda and Potash from their respective Sulphates. H. von Miller and C. Opl. 25,343. December 31.
Separating Salts from their Solutions. C. Kellner. 25,368. December 31.

Gazette Notices.

PARTNERSHIPS DISSOLVED.

R. A. GASKELL and P. TICKLE, brick and tile manufacturers, Part, St. Helens, under the style of the Ramford Brick and Tile Company.
J. GREGORY, S. GREGORY, J. DIXON, and M. A. GREGORY, firebrick manufacturers, Deepcar, under the style of John Gregory and Co.

BANKRUPTCY ACTS, 1883 and 1890.

Receiving Order.

ROBINSON, GEORGE TETLEY, Crowle, Lincolnshire, brick and tile manufacturer.

Adjudication.

JAY, ROBERT CHARLES, Regent's Wharf, Maroon-street, Limchouse, E.C., late St. Luke's-road, Westbourne Park, W., tank manufacturer.

IMPORTS OF CHEMICAL PRODUCTS

AT

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending December 29th.

Acetic Acid—
Holland, 120 pkgs. Beresford & Co.
" 225 T. H. Lee
Acetone—
Holland, 7 pkgs. T. H. Lee
Alkali—
Germany, 12 c. T. H. Lee
Belgium, 1 J. Coppo & Co.
Germany, 24 pkgs. L. & I. D. Jt. Co.
Antimony Ore—
Sydney, 18 t. T. Merry & Co.

Alum—
Belgium, 12 pkgs. R. W. Greeff & Co.
Holland, 3 Ohlenschlager Brs.
Asbestos—
U. States, £417 Furness, Withy & Co.
Germany, £12 Craven & Co.
" 10 L. & I. D. Jt. Co.
Barium Chloride—
Germany, 10 pkgs. Petri Brs.
Barytes—
Holland, 40 cks. J. L. Lyon & Co.
" 42 Burrell & Co.
Germany, 121 W. Harrison & Co.

" 35 Blundell, Spence & Co.
Belgium, 44 J. L. Lyon & Co.
Holland, 18 Thames S. T. & L. Co., Ltd.
Camphor—
Germany, 4 pkgs. L. & I. D. Jt. Co.
" 105 H. A. Litchfield & Co.
China, 300 Hale & Son
Germany, 100 T. Merry & Son
Caoutchouc—
France, 3 c. H. Johnson & Sons
E. Indies, 57 Prop. Bull. Wf.

Castor Oil—
Spain, 50 cs. J. H. Dore & Co.
E. Indies, 165 cks. Cayzer, Irvine, & Co.
" 122 Ross & Deering
" 70 cs. Anderson, Weber, & Smith
Italy, 10 cs. Langton, Eldon & Co.
Belgium, 80 brls. J. T. Mortens
" 30 Sawyer, Sons & Co.
Caustic Potash—
Holland, 93 c. J. M. Steel & Co.

Chemicals (otherwise undescribed)

Germany,	31 pkgs.	T. H. Lee
"	4	Craven & Co.
"	3	Phillipps & Graves
"	126	A. & M. Zimmermann
Belgium,	65	O. Scholzig
"	5 pkgs.	T. Palmer
Holland,	5	Phillipps & Graves
"	5	T. H. Lee
"	23	Beresford & Co.
"	118	H. Lorenz
"	5	G. Rahn & Co.
"	8	W. Burton & Sons

Cream of Tartar—

Holland,	87 pkgs.	Kirkpatrick & Co.
France,	10	C. F. Gerhardt
"	20	W. C. Bacon & Co.
"	7	B. & F. Wf. Co.
Spain,	10	W. C. Bacon & Co.

Dextrine—

Germany,	200 pkgs.	W. Balchin
----------	-----------	------------

Dyestuffs—

Annatto		
E. Indies,	1 pkge.	J. P. Alpe & Co.
Argois		
Italy,	519 pkgs.	Thames S. T. & L. Co., Ltd.

Cochineal

Canaries,	10 pkgs.	G. S. Bruce
-----------	----------	-------------

Extracts

France,	30 pkgs.	Union L. Co.
"	210	L. J. Levinstein & Sons
U. States,	57	W. Burton & Sons

Indigo

E. Indies,	62 chts.	Wrightson & Son
------------	----------	-----------------

"	35	Walker, Munzie & Co.
---	----	----------------------

"	29	R. von Glehn & Sons
---	----	---------------------

"	38	A. Frey & Co., Ltd.
---	----	---------------------

"	13	J. Hatton, Hall & Co.
---	----	-----------------------

"	6	L. & I. D. Jt. Co.
---	---	--------------------

"	15	T. Barlow & Bro.
---	----	------------------

"	2	E. Bower & Co.
---	---	----------------

"	15	Parsons & Keith
---	----	-----------------

Myrabolams

E. Indies,	683 pkgs.	A. Hagan
------------	-----------	----------

"	2,000	W. Shelcott
---	-------	-------------

"	194	H. A. Litchfield & Co.
---	-----	------------------------

"	683	Perkins & Homer
---	-----	-----------------

Orchella

E. Indies,	3 pkgs.	J. P. Alpe & Co.
------------	---------	------------------

Saffron

Spain,	1 pkge.	Beresford & Co.
--------	---------	-----------------

Shumac

Italy,	102 pkgs.	Hicks, Nash, & Co.
--------	-----------	--------------------

"	250	B. & N. Wf. Co.
---	-----	-----------------

Tanner's Bark

Natal,	54 L.	A. & W. Nesbitt
--------	-------	-----------------

Turmeric

E. Indies,	67 pkgs.	J. P. Alpe & Co.
------------	----------	------------------

"	65	Brown & Elmslie
---	----	-----------------

Dyestuffs (otherwise undescribed)

France,	617	L. Henle
---------	-----	----------

Farina—

Germany,	50 pkgs.	Ohlenschlager
----------	----------	---------------

"	50	J. Knill & Co.
---	----	----------------

Glucose—

U. States,	2,050 pkgs.	2,773 c.
------------	-------------	----------

"	960	960 c.
---	-----	--------

"	2,000	2,000
---	-------	-------

"	500	500
---	-----	-----

"	445	2,050
---	-----	-------

"	250	250
---	-----	-----

"	249	1,494
---	-----	-------

"	50	281
---	----	-----

"	1,999	1,999
---	-------	-------

"	50	283
---	----	-----

"	50	285
---	----	-----

Magnesia—

Holland,	10 pkgs.	Beresford & Co.
----------	----------	-----------------

Magnesium Sulphate—

Germany,	150 pkgs.	Berger, Kahler & Co.
----------	-----------	----------------------

Manure—

Germany,	250 t.	J. Gibbs & Co., Ltd.
----------	--------	----------------------

E. Indies,	940	A. Hunter & Co.
------------	-----	-----------------

France,	130	"
---------	-----	---

E. Indies,	120	Fox, Roy & Co.
------------	-----	----------------

Mica—

E. Indies,	74 pkgs.	W. M. Smith & Sons
------------	----------	--------------------

Molasses—

Natal,	60 cks.	360 c.
--------	---------	--------

Ozokerit—

Germany,	196 pkgs.	Un Ltge. Co.
----------	-----------	--------------

Paraffin Wax—

U. States,	2,096 brls.	505 pkgs.
------------	-------------	-----------

"	250	96
---	-----	----

"	96	H. Hill & Sons
---	----	----------------

"	96	G. H. Frank
---	----	-------------

Phosphorus—

Japan,	10 pkgs.	China & Japan Trading Co.
--------	----------	---------------------------

Pitch—

W. Russia,	420 cks.	Fellows, Morton, & Co.
------------	----------	------------------------

Plumbago—

U. States,	400 pkgs.	Rosenberg, Loewe & Co.
------------	-----------	------------------------

Germany,	140 cs.	Prop. Scott's Wf.
----------	---------	-------------------

Holland,	90 cks.	B. Gallaway
----------	---------	-------------

Ceylon,	169 brls.	J. Thredder, Sen. & Co.
---------	-----------	-------------------------

Potash—

Canada,	35 c.	J. Barber & Co.
---------	-------	-----------------

Potassium Oxymuriate—

Sweden,	25 pkgs.	G. Boor & Co.
---------	----------	---------------

Pyrites—

Spain,	2,441 t.	Naylor, Benzon, & Co.
--------	----------	-----------------------

"	580	Anderson, Anderson, & Co.
---	-----	---------------------------

"	1,200	C. L. Vasey & Co.
---	-------	-------------------

Rosin—

U. States,	100 brls.	Suter, Hartman, & Co.
------------	-----------	-----------------------

Salt—

Portugal,	6180	Bumsted & Co.
-----------	------	---------------

Saltpetre—

E. Indies,	1,223 bgs.	Ralli Brs.
------------	------------	------------

Germany,	40 cks.	J. Hall & Sons
----------	---------	----------------

"	30	Brown & Elmslie
---	----	-----------------

Soda Ash—

Holland,	1,020 c.	R. Waters
----------	----------	-----------

Starch—

Belgium,	10 pkgs.	T. H. Lee
----------	----------	-----------

"	39	G. S. N. Co.
---	----	--------------

Holland,	291	Little & Johnston
----------	-----	-------------------

"	114	G. Rahn & Co.
---	-----	---------------

"	85	Phillipps & Graves
---	----	--------------------

"	880	Vokins & Co., Ltd.
---	-----	--------------------

Germany,	240	Horne & Co.
----------	-----	-------------

Stearine—

France,	47 bgs.	Sheppy Glue & Chemical Wks.
---------	---------	-----------------------------

Sulphur—

Italy,	150 t.	W. C. Bacon & Co.
--------	--------	-------------------

Tallow and Stearine—

France,	15 cks.	J. A. Smith
---------	---------	-------------

Tar—

France,	280 brls.	W. F. Malcolm & Co.
---------	-----------	---------------------

"	280	Union Whvs. Co.
---	-----	-----------------

Germany,	150	Linck, Moeller, & Co.
----------	-----	-----------------------

Tartaric Acid—

Holland,	13 pkgs.	W. C. Bacon & Co.
----------	----------	-------------------

Italy,	32	B. & F. Wf. Co.
--------	----	-----------------

Holland,	8	F. C. Devon & Co.
----------	---	-------------------

France,	20	B. & F. Wf. Co.
---------	----	-----------------

Turpentine—

N. Russia,	52 brls.	Chiesman & Co.
------------	----------	----------------

Ultramarine—

Holland,	3 cs.	W. H. Carey & Sons
----------	-------	--------------------

Belgium,	2 pkgs.	W. Harrison & Co.
----------	---------	-------------------

France,	4 cks.	C. J. Langmead
---------	--------	----------------

Varnish—

U. States,	55 pkgs.	Allan Brs. & Co.
------------	----------	------------------

Germany,	9	L. & I. Dk. Co.
----------	---	-----------------

Belgium,	6	S. Berger & Sons
----------	---	------------------

White Lead—

Germany,	29 cks.	Spies Brs. & Co.
----------	---------	------------------

"	4	Haefler, Hilpert, & Co.
---	---	-------------------------

Austria,	14	W. Adolph & Co.
----------	----	-----------------

Germany,	24	Petri Brs.
----------	----	------------

"	6 cs.	Grosscurth, Luboldt & Co.
---	-------	---------------------------

Holland,	30 cks.	Spies Brs. & Co.
----------	---------	------------------

"	56	Randall Brs.
---	----	--------------

Wood Pulp—

Holland,	54 pkgs.	C. S. Lovell
----------	----------	--------------

"	41	Little & Johnston
---	----	-------------------

"	1,308	E. J. & W. Goldsmith
---	-------	----------------------

Germany,

"	30	C. S. Lovell
---	----	--------------

"	200	M. Benschen
---	-----	-------------

"	124	H. Everett
---	-----	------------

"	100	Craven & Co.
---	-----	--------------

Norway,	5,200	Christopherson & Co.
---------	-------	----------------------

Denmark,	18	Becker & Ulrich
----------	----	-----------------

Zinc Oxide—

U. States,	100 brls.	M. Ashby, Ltd.
------------	-----------	----------------

Germany,	75	"
----------	----	---

Holland,	55	"
----------	----	---

LIVERPOOL.

Week ending December 27th.

Acetate of Lime—

New York,	818 bgs.	
-----------	----------	--

Albumen—

Hamburg,	3 cks.	D. Currie & Co.
----------	--------	-----------------

Aniline Colours—

Paris,	8 cs.	Marwood & Christian
--------	-------	---------------------

Antimony—

Antofagasta,	150 sks.	
--------------	----------	--

Asbestos—

Antwerp,	5 cs.	
----------	-------	--

Barytes—

Rotterdam,	3 cks.	
------------	--------	--

Borate of Lime—

Antofagasta,	2,820 bgs.	
--------------	------------	--

Borax—

Mollendo,	900 sks.	
-----------	----------	--

Caouchouc—

Hamburg,	46 bls.	Brown, Geveke & Co.
----------	---------	---------------------

Castor Oil—

Calcutta,	790 cs.	Ralli Brs.
-----------	---------	------------

"	300	"
---	-----	---

Marseilles,	78 cks.	Marwood & Christian
-------------	---------	---------------------

"	65 brls.	J. J. Mack & Sons
---	----------	-------------------

Caustic Potash—

Antwerp,	21 dms.	
----------	---------	--

Cellulose—

Fiume,	102 bls.	W. Friedlander
--------	----------	----------------

Colours—

Hamburg,	20 cs.	
----------	--------	--

"	20	50 cks. D. Currie & Co.
---	----	-------------------------

Paris,	14	Marwood & Christian
--------	----	---------------------

Cottonseed Oil—

New York,	1 brl.	Suter & Co.
-----------	--------	-------------

N. Orleans,	500	
-------------	-----	--

White Lead—

Antwerp, 21 cks.
 Rotterdam, 72

Wood Pulp—

Hamburg, 210 bls.
 Christiania, 520
 Drammen, 2,706
 Skien, 600
 Antwerp, 51
 Rotterdam, 82
 Gothenburg, 136

Zinc Ashes—

Rotterdam, 70 cks.

Zinc Oxide—

New York, 50 brls.
 Antwerp, 25 cks.

MANCHESTER.

Week ending December 29th.

Acetic Acid—

Rotterdam, 2 cks.

Arachide Oil—

Rotterdam, 10 cks.

Barium Chloride—

Rotterdam, 12 cks.

Barytes—

Rotterdam, 200 bgs.

Bone Ash—

Rio Grande do Sul, 755,021 kilos
 Porto Alegre, 114,000

Colours—

Rotterdam, 31 cs. 70 cks. 14 brls. 17 bxs.
 Treport, 2 Arnati & Harrison
 Antwerp, 26

Dried Blood—

Porto Alegre, 1,254 bgs.

Dyestuffs—

Alizarine
 Rotterdam, 16 cks. 2 cs.

Extracts

Treport, 15 cks. Arnati & Harrison

Indigo

Rotterdam, 10

Logwood

Rotterdam, 1 ckt.
 Laguna de Terminos, 265 t.
 " 261 D. Midgley & Sons

Guano—

Porto Alegre, 1,710 bgs.

Limestone—

Antwerp, 2 crts.

Litharge—

Rotterdam, 16 cks.

Oxalic Acid—

Rotterdam, 20 cks.

Potash—

Treport, 41 dms. Arnati & Harrison

Rosin—

Wilmington, 5,067 brls.

Sodium Acetate—

Treport, 15 cks. Arnati & Harrison

Starch—

Rotterdam, 33½ cs. 10 cks.

Tartar—

Bordeaux, 2 cks. J. & P. Hutchinson

Tartaric Acid—

Rotterdam, 10 cks.

Ultramarine—

Rotterdam, 1 ck. 3 cs.

Zinc White—

Rotterdam, 1 ck.

HULL.

Week ending December 29th.

Acetic Acid—

Rotterdam, 10 blns. Hutchinson & Son

Acid—

Bari, 2 cks. Wilson, Sons, & Co., Ltd.

Barytes—

Antwerp, 50 bgs. Bailey & Leatham

Carbolic Acid—

Amsterdam, 45 cks. W. & C. L. Ringrose

Chemicals (otherwise undescribed)

Dunkirk, 44 cks. Wilson, Sons, & Co., Ltd.

Bari, 40 pks.

Bremen, 3 cs. Veltmann & Co.

Colours—

Rotterdam, 3 cs. 8 pkgs. Hutchinson & Son

" 11 cks. W. & C. L. Ringrose

Ghent, 9 Wilson, Sons, & Co., Ltd.

" 8

Bremen, 3 cs. 1 Veltmann & Co.

Antwerp, 5 J. Pyefinch & Co.

" 7 Wilson, Sons, & Co., Ltd.

Dextrine—

Stettin, 200 bgs. Wilson, Sons, & Co., Ltd.

Dyestuffs—

Alizarine
 Rotterdam, 40 brls. Hutchinson & Son

" 15 cks. W. & C. L. Ringrose

Madder
 Rotterdam, 3 cks. W. & C. L. Ringrose

Shumac
 Trieste, 65 bgs. Wilson, Sons, & Co., Ltd.

Palermo, 773 pks. "

Yalonia
 Smyrna, 201 t.

Farina—
 Stettin, 400 bgs. Wilson, Sons, & Co., Ltd.

Glucose—
 Rotterdam, 40 bgs. Hutchinson & Son

New York, 250 100 brls.

Stettin, 300 44 cks.

Manure—
 Ghent, 180 t. Wilson, Sons, & Co., Ltd.

Paint—
 Philadelphia, 25 brls.

Pitch—
 Dunkirk, 11 cks. Wilson, Sons, & Co., Ltd.

Plumbago—
 Hamburg, 15 cks. Wilson, Sons, & Co., Ltd.

Potash—
 Antwerp, 20 dms. Wilson, Sons, & Co., Ltd.

Potassium Chloride—
 Antwerp, 100 kgs. Bailey & Leatham

Pumice Stone—
 Trieste, 2 pks. Wilson, Sons, & Co., Ltd.

Messina, 96 bgs. 110

Saltpetre—
 Hamburg, 5 cks.

Antwerp, 135 bgs. Wilson, Sons, & Co., Ltd.

Soap—
 Bari, 20 cs. Wilson, Sons, & Co., Ltd.

Starch—
 Antwerp, 240 cs. Bailey & Leatham

Bremen, 2,092 Veltmann & Co.

Stearine—
 New York, 10 brls. Wilson, Sons, & Co., Ltd.

Antwerp, 13 bgs. Bailey & Leatham

" 10 Wilson, Sons, & Co., Ltd.

Sulphur—
 Catania, 710 bgs. 50 t. Wilson, Sons, & Co., Ltd.

" 74 pks. Aire & Calder N. Co.

Tallow—
 N. York, 100 hhd. Wilson, Sons, & Co., Ltd.

Tartar—
 Messina, 3 cks. Wilson, Sons, & Co., Ltd.

Tartaric Acid—
 Rotterdam, 2 brls. Hutchinson & Son

Treacle—

N. York, 525 brls. Wilson, Sons, & Co., Ltd.

Varnish—

N. York, 19 brls. Wilson, Sons, & Co., Ltd.

" 2 dms. G.R. Sanderson & Co.

Wood Pulp—

Hango, 250 bls. J. Good & Sons

" 32 Furley & Co.

" 56

GLASGOW.

Week ending January 3rd.

Acetate of Lime—

Philadelphia, 455 bgs. 455 bls.

Aniline—

Rotterdam, 16 brls. J. Rankine & Son

Aniline Colours—

Hamburg, 7 cs. 40 cks.

Arachide Oil—

Rotterdam, 4 cks. J. Rankine & Son

Barytes Sulphate—

Antwerp, 500 bgs. 60 cks.

Castor Oil—

Antwerp, 199 cks.

Colours—

Hamburg, 2 cks. 5 cs. J. Rankine & Son

Rotterdam, 3 brls.

Antwerp, 1 cs.

Cottonseed Oil—

New York, 131 brls.

Cream of Tartar—

Oporto, 5 cks.

Dyestuffs—

Alizarine
 Rotterdam, 32 brls. J. Rankine & Son

Cutch
 Rangoon, 350 bxs.

Extracts
 Rouen, 10 cks.

Antwerp, 42

Logwood
 Belize, 494 t.

Farina—
 Hamburg, 200 bgs.

Glucose—
 New York, 350 brls.

Nitrite—
 Rotterdam, 3 cks. J. Rankine & Son

Paint—
 New York, 3 brls.

Philadelphia, 1 bx.

Phosphates—
 Ghent, 1,020 bgs.

Potash—
 Hamburg, 40 cks.

Potassium Carbonate—
 Hamburg, 8 cks.

Pyrites—
 Huelva, 1,600 t.

" 3,205 Tharsis Co.

Rosin—
 New York, 250 brls.

Saltpetre—
 Hamburg, 40 kgs.

Soap—
 Philadelphia, 20 cs.

Starch—
 Antwerp, 200 cs. 50 bgs.

Stearine—
 Antwerp, 250 bgs.

Tallow—
 New York, 100 pcs.

Tartar—
 Bordeaux, 14 cks.

" 5

Treacle—
 New York, 500 brls.

Philadelphia, 1,500

Ultramarine—
 Hamburg, 1 ck.

Varnish—
 New York, 24 brls. 29 cs.

Waste Salt—
 Hamburg, 700 cks.

Wood Pulp—

Hamburg, 40 bls.

Christiania, 446 46 cs.

Pictou N.S., 200 t.

Gothenburg, 240 Henderson & Co.

" 240

Zinc Ashes—
 Antwerp, 12 cks.

Zinc Oxide—
 New York, 200 brls.

Zinc White—
 Rotterdam, 100 cks. J.

TYNE.

Week ending December 29th.

Alum Earth—

Hamburg, 36 cks. Tyne & Sons

Carbonic Acid Gas—

Rotterdam, 100 tubes. Tyne & Sons

Cod Oil—

Bergen, 4 brls.

Limestone—

Antwerp, 1 crte. Tyne & Sons

Potash—

Hamburg, 5 cks. Tyne & Sons

Starch—

Rotterdam, 70 cs. Tyne & Sons

Varnish—

Laurvig, 1 cs.

Wood Pulp—

Gothenburg, 82 pkgs.

Laurvig, 60 bls.

GOOLE.

Week ending December 29th.

Albumen—

Hamburg, 2 cs.

Alkali—

Hamburg, 22 cks.

Antimony—

Boulogne, 5 cks.

Colours—

Hamburg, 4 cks. 10 cs.

Copperas—

Boulogne, 1 ck.

Dyestuffs—

Alizarine
 Rotterdam, 63 pkgs. 3 brls.

Extracts
 Ghent, 50 cks.

Dyestuffs (otherwise undescribed)
 Rotterdam, 97 pkgs.

Boulogne, 7 10 cks.

Ghent, 6

Farina—
 Hamburg, 1,700 bgs.

Delfsdyhl, 230

Potash—
 Rotterdam, 20 cks.

Hamburg, 10

Calais, 47 dms.

Dunkirk, 3 46

Saltpetre—
 Hamburg, 60 cks.

Antwerp, 134 bgs.

Sodium Silicate—
 Rotterdam, 1 ck.

Tar Salts—
 Hamburg, 10 cks.

Waste Salt—
 Hamburg, 949 cks.

GRIMSBY.

Week ending December 29th.

Albumen—

Hamburg, 5 cks.

Aniline—

Antwerp, 3 cks. 3 cs. 29

Chemicals (otherwise undescribed)
 Hamburg, 6 cks. 37 pkgs.

Colours—

Hamburg, 29 cks. 9 cs.

Antwerp, 31 14 28

Farina—
 Hamburg, 3 pkgs.

Zinc Ashes—
 Antwerp, 21 cks.

EXPORTS OF CHEMICAL PRODUCTS OF THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.			LIVERPOOL.		
Week ending January 2nd.			Week ending January 2nd.		
Acids—			Acetic Acid—		
Trinidad, 4 cs.	£34		Lisbon, 2 c.	20	£29
Delagoa Bay, 11 pkgs.	34		Alkali—		
Alkali—			B. Ayres, 1 c.	20	£29
Singapore, 15 c.	£8		Paris, 1 c.	20	£29
Sydney, 8	16		Alkali Waste—		
Melbourne, 5 t.	43		Pr. Elmhurst, 1 c.	20	£29
Adelaide, 4	12		Alum—		
Alum Cake—			Catania, 2 c.	20	£29
Calcutta, 74 t.	£300		Havana, 1 c.	20	£29
Ammonium Carbonate—			Coccatonville, 1 c.	20	£29
Newcastle, 1 t.	£37		Lisbon, 1 c.	20	£29
Cologne, 3 18 c.	140		Paris, 1 c.	20	£29
Hio, 2	68		Odena, 1 c.	20	£29
Rosario, 1	32		Ammonium Sulphate—		
Paris, 3 15	128		Malaga, 1 c.	20	£29
Dunedin, 10	20		Leghorn, 1 c.	20	£29
Ammonium Chloride—			Valencia, 1 c.	20	£29
Bushire, 11 c.	£98		New York, 1 c.	20	£29
Sydney, 7 t.	145		Los Angeles, 1 c.	20	£29
Ghent, 72	808		San Francisco, 1 c.	20	£29
Hamburg, 50	600		San Pedro de Macoris, 1 c.	20	£29
Batoum, 2	24		Philadelphia, 1 c.	20	£29
Salonica, 2 5	80		Ammonium Sulphate—		
Rotterdam, 2 1	75		Malaga, 1 c.	20	£29
Cologne, 1 2	40		Leghorn, 1 c.	20	£29
Ammonium Sulphate—			Valencia, 1 c.	20	£29
Demerara, 18 t.	£207		New York, 1 c.	20	£29
Jersey, 10	133		Los Angeles, 1 c.	20	£29
Rotterdam, 39 3 c.	446		San Francisco, 1 c.	20	£29
Canaria, 45 18	561		San Pedro de Macoris, 1 c.	20	£29
Dusseldorf, 5	60		Philadelphia, 1 c.	20	£29
Antwerp, 118	1,328		Ammonium Sulphate—		
Hamburg, 300	2,200		Malaga, 1 c.	20	£29
Ostend, 14 12	181		Leghorn, 1 c.	20	£29
Bordeaux, 22 17	292		Valencia, 1 c.	20	£29
Ghent, 25	320		New York, 1 c.	20	£29
Arsenic—			Los Angeles, 1 c.	20	£29
Napier, 4 t.	£62		San Francisco, 1 c.	20	£29
Bisulphite of Lime—			San Pedro de Macoris, 1 c.	20	£29
Calcutta, 6 t.	£114		Philadelphia, 1 c.	20	£29
Borax—			Ammonium Sulphate—		
Delagoa Bay, 1 t.	£20		Malaga, 1 c.	20	£29
Hamburg, 30 cks.	140		Leghorn, 1 c.	20	£29
Batoum, 1 t. 1 c.	23		Valencia, 1 c.	20	£29
Valparaiso, 4	10		New York, 1 c.	20	£29
Carbolic Acid—			Los Angeles, 1 c.	20	£29
Rotterdam, 49 cks. 9 t. 18 c.	£366		San Francisco, 1 c.	20	£29
Dusseldorf, 40	274		San Pedro de Macoris, 1 c.	20	£29
Hio, 2	91		Philadelphia, 1 c.	20	£29
Antwerp, 8 pkgs.	10		Ammonium Sulphate—		
Carbonic Acid Gas—			Malaga, 1 c.	20	£29
Lyttelton, 4 cs.	£34		Leghorn, 1 c.	20	£29
Rosario, 8 tubes.	22		Valencia, 1 c.	20	£29
Caustic Potash—			New York, 1 c.	20	£29
Sydney, 2 t. 2 c.	£45		Los Angeles, 1 c.	20	£29
Caustic Soda—			San Francisco, 1 c.	20	£29
Natal, 1 t. 11 c.	£37		San Pedro de Macoris, 1 c.	20	£29
New York, 15	12		Philadelphia, 1 c.	20	£29
E. London, 1 3	30		Ammonium Sulphate—		
Algoa Bay, 1 5	25		Malaga, 1 c.	20	£29
Brisbane, 15 12	132		Leghorn, 1 c.	20	£29
Melbourne, 2 15	47		Valencia, 1 c.	20	£29
Dunedin, 10 7	111		New York, 1 c.	20	£29
Messina, 9	7		Los Angeles, 1 c.	20	£29
Chemicals (otherwise under.)—			San Francisco, 1 c.	20	£29
E. London, 2 c.	£6		San Pedro de Macoris, 1 c.	20	£29
Algoa Bay, 41 cs. 5 cks.	95		Philadelphia, 1 c.	20	£29
Lyttelton, 3	34		Ammonium Sulphate—		
Jamaica, 6	28		Malaga, 1 c.	20	£29
Madras, 3 t. 2 c.	119		Leghorn, 1 c.	20	£29
Rotterdam, 5 13	74		Valencia, 1 c.	20	£29
Algoa Bay, 5	39		New York, 1 c.	20	£29
Shanghai, 6	26		Los Angeles, 1 c.	20	£29
Copenhagen, 1 19	50		San Francisco, 1 c.	20	£29
Adelaide, 26 pkgs.	£12		San Pedro de Macoris, 1 c.	20	£29
Chloride of Lime—			Philadelphia, 1 c.	20	£29
Trinidad, 14 c.	7		Ammonium Sulphate—		
Cape Town, 7	7		Malaga, 1 c.	20	£29
Citric Acid—			Leghorn, 1 c.	20	£29
Freemantle, 1 t.	1		Valencia, 1 c.	20	£29
Melbourne, 1 t.	1		New York, 1 c.	20	£29
Rotterdam, 1	1		Los Angeles, 1 c.	20	£29
Libau, 1	1		San Francisco, 1 c.	20	£29
Genua, 1	1		San Pedro de Macoris, 1 c.	20	£29
Dusseldorf, 1	1		Philadelphia, 1 c.	20	£29
Bonn, 1	1		Ammonium Sulphate—		
Sydney, 1	1		Malaga, 1 c.	20	£29
Antwerp, 1	1		Leghorn, 1 c.	20	£29

R. Ayres,	4	6	13
Bombay,	5	2	19
Calcutta,	2	1	5

Carbolic Acid—

New York,	9 t.	1 c.	3 q.	£449
Sydney,				
Vera Cruz,				
St. Croix,				
M. Video,				
Rosario,				
Rotterdam,	21	4		1,038
Newport News,	7	10		248

Castor Oil—

Sierra Leone,	3 cks.		
Tonala,			

Caustic Potash—

New York,	5 t.	7 c.	£135
-----------	------	------	------

Caustic Soda—

Adelaide,	35 dms.		
Antwerp,	30		
Amsterdam,	27		
Baltimore,	50		
Barcelona,	790		
Bari,	150		
Bombay,	200		
Brindisi,	12		
Calcutta,	200		
Genoa,	88		
Hamburg,	61		
Hioho,	10		
Leghorn,	138		
Manaos,	10		
Matanzas,	30		
Messina,	82		
M. Video,	173		
Montreal,	109		
N. Orleans,	715		
Newport News,	850		
New York,	705		
Palermo,	30		
Pernambuco,	60		
Rotterdam,	106		
Salaverry,	10		
Samarang,	40		
Seattle,	30		
Seville,	32		
Singapore,	15		
Sourabaya,	40		
Talcahuano,	40		
Trieste,	5		
Trinidad,	14		
Valparaiso,	105		
Venice,	30		
Yokohama,	350		

Chemicals otherwise undescribed)

New York,	10 t.	9 c.	£3917
Odessa,	3		113
Marseilles,	4		7
Palermo,	10		18
Catania,	6		11
Alexandria,	1		37
Philadelphia,	1	2 q.	10
Rotterdam,	2	7	85
Messine,	3		5
Trebinde,	12		22
Smyrna,	2		74
Trieste,	1		37
Patras,	4		7
Genoa,	1	4	44

China Clay—

Boston,	48 t.		
Calcutta,	56	11 c.	
Lisbon,	19		
Philadelphia,	200 cks.		
Portland, M.,	110		
Rio de Janeiro,	72		

Citric Acid—

Vera Cruz,	2 c.	£14
------------	------	-----

Coal Products—

Aniline Colours			
Barcelona,	2 kgs.		
Boston,	3	50 cs.	

Pitch

Ancona,	9,000 t.		
Cette,	1,215		
Valparaiso,	30 brls.		

Tar

Baltimore,	47 cks.		
Lagos,	20 dms.	1 cs.	
Pt. Natal,	200		

Tar Oil

Maranham,	1 cs.		
-----------	-------	--	--

Cobalt Oxide—

Giljon,		3 q.	£99
Rotterdam,	3 c.		75

Copperas—

Syria,	1 t.	30 c.	£2
Santos,	2	13	5

Copper Sulphate—

Maranham,		4 c.	2 q.	£5
Vigo,	6 t.			90
Ancona,	10		3	145
Rosario,	14	14		227
Catania,	11	19		174
Oporto,	20	1	3	291
Marseilles,	15	1	2	225

Disinfectants—

Bombay,	4 t.	19 c.	£25
---------	------	-------	-----

Dried Blood—

Las Palmas,	5 t.	£41
-------------	------	-----

Farina—

Callao,	4 cs.		
---------	-------	--	--

Guano—

Malaga,	20 t.	£170
---------	-------	------

Lime—

Monrovia,	7 t.	10 c.	£8
-----------	------	-------	----

Litharge—

Jaffa,	3 cks.		
--------	--------	--	--

Magnesia—

Alicante,	1 t.	8 c.	2 q.	£22
N. Orleans,	1	6		40
Rosario,		4	1	16

Magnesium Citrate—

Philadelphia,	1 t.	£61
---------------	------	-----

Magnesium Sulphate—

Oporto,	20 cks.		
Rio de Janeiro,		10 kgs.	
Valparaiso,	2		

Manganese—

Philadelphia,	2 t.	3 c.	3 q.	£11
---------------	------	------	------	-----

Manganese Sulphate—

Valparaiso,	10 c.	£9
-------------	-------	----

Manure—

Valencia,	50 t.	9 c.	1 q.	£160
Tarragona,	8	2	2	30

Metallic Sodium—

Hamburg,	1 c.	1 q.	£11
----------	------	------	-----

Ochre—

Bahia,	10 brls.		
--------	----------	--	--

Paint—

Amsterdam,	4 kgs.	3 dms.	
Accra,		24	
Alexandria,	198	9 cks.	
Bahia,		2	
Callao,			70 cs.
Cardenas,		2	
Cape Town,	66		
Chittagong,	5		
Guayaquil,			57
Hamburg,	10	1	
Havana,		2	
Kerasunde,		2	
Jaffa,		8	
Lagos,	132		
La Libertad,		20	
Larnaca,		1	
Malta,		2	1 bx.
Manaos,		2	
Manila,	549	45	
Maranham,	1	3	1 cs.
New York,		7	
Old Calabar,	16		
Panama,		3	
Pernambuco,	25		
Rouen,	11		
Sagua la Grande,		2	
Santa Cruz,	60		
San Juan,	104	8	
Savanilla,	20		
Sierra Leone,	84		
Smyrna,	100		
Talcahuano,		30	
Tampico,		2	
Teneriffe,			16 dms.
Valparaiso,		95	
Vera Cruz,			2 cs.

Painters' Colours—

Acajutla,			
Antwerp,			1 brl.
Antofagasta,			6 cs.
Bordeaux,			2
Boston,	10		
Cartagena N.G.,	200 kgs.		
Cienfuegos,			3
Halifax,		10	
Hamburg,		8	
Havana,	4		
Lanzarote,	1		
Loanda,		20	
Malta,			3
Manaos,	9		
M. Video,		2	1
N. Orleans,			22
N. York,	1 pkge.	40	
Odessa,	4 bxs.	50	
Pana,			8
Philadelphia,	13		2

Pisagua,			25
Portland, 2 crts.	2		2
Pt. Natal,			20
Quebec,			20
Rangoon,			2
San Francisco,	7		
Santos,		80	
Sierra Leone,		1	
Smyrna,		1	
Trinidad,			1
Valparaiso,	1,135	15	13
Vera Cruz,		4	

Phosphorus—

Havana,		6 c.	£85
---------	--	------	-----

Picric Acid—

San Francisco,	3 t.	11 c.	2 q.	£310
----------------	------	-------	------	------

Potassium Bichromate—

Passages,	1 t.	2 c.	3 q.	£45
Alexandria,		1	4	48
Hong Kong,			2	6

Potassium Carbonate—

Kurrachee,	2 c.	£5
------------	------	----

Potassium Chlorate—

New York,	48 t.	5 c.	£2364
Gothenburg,	10		450
Malmo,	3		170
Genoa,	12		145
Antwerp,		5	15
Palermo,		5	15
Hioho,	15		879
Rotterdam,	1	10	77

Potassium Prussiate—

Vigo,	1 c.	1 q.	£6
-------	------	------	----

Salt—

Accra,	29 t.		
Ambrizette,	13		
Antwerp,	150		
Adelaide,	2		
Akassa,	300		
Benin,	10		
Black Point,	7		
Boston,	100		
Brisbane,	250		
Calcutta,	3,222		
Cameroons,	20		
Cape Lopez,	9		
Cess River,	10		
Conakry,	15		
Copenhagen,	451		
Degama,	25		
Fernando Po,	4		
Galveston,	1,176		
Gaboon,	5		
Ghent,	75		
Halifax,	1		
Hamburg,	1		
Iloilo,		8 c.	
Landana,	4		
Livingstone,	7	10	
Matadi,		14	
Melbourne,	603		
M. Video,	41	11	
Newcastle,	185		
N. Orleans,	1,038		
Newport News,	449		
New York,	53		
Noqui,	8		
Old Calabar,	178	1	
Opobo,	140	6	
Philadelphia,	44	13	
Portland, M.,	400		
Port Royal,	1,122		
Rangoon,	1,615		
Rotterdam,	418		
San Francisco,	123		
Sette Kamma,	9		
Sierra Leone,	211		
Sulymah,	30	3	
Sydney,	820		
Valparaiso,	6	17	
Vancouver,	23		

Salt Cake—

Philadelphia,	137 t.	17 c.	£239
Baltimore,	70	5	107
Newport News,	96		123

Saltpetre—

B. Ayres,		19 c.	£22
-----------	--	-------	-----

Sheep Dip—

M. Video,	1 t.	12 c.	2 q.	£40
B. Ayres,	3,000 gls.	33 t.	10 c.	1,106

Soap—

Alexandria,			5 cs.	
Alga Bay,	1,275 bxs.			26 bdls.
Antwerp,			600	
Baradoes,	15			
Bluefields,	75			
Bombay,			27	
Cabenda,	50			
Calcutta,			10	
Callao,			4	
C. C. Castle,	30			
Cape Town,	2,237			
Catania,			1	
Chama,	100			

Colon,				
Durban,				
E. London,	300			
Genoa,	1,050			
Gd. Bassa,	200			
Grenada,	1,060			
Guayaquil,	110			
Hamburg,	100			
Las Palmas,	800	4	95	
Macassar,	132			
Malta,	3,000			
Manaos,	20		64	
New York,	50			
Pt. Elizabeth,	700			
Portland M.,			10	
Pt. Natal,	630			
Rotterdam,			150	
St. Lucia,	34			
Sandy Point,	10			
Santos,			1	
Sydney,	1,000		1,850	
Trinidad,	700			
Valparaiso,			28	
Zanzibar,	1,520			

Soda Alkali—

Cartagena, N.G.,		500 cks.	
Genoa,		62 brls.	
Leghorn,		60	
Naples,		20	

Soda Ash—</

Sodium Prussiate—			
Vigo,	1 kg.		
Sodium Silicate—			
Lisbon,	64 cks.		
Tunis,	5 brls.		
Sodium Sulphate—			
Rio de Janeiro,	5 kgs.		
Sodium Tartrate—			
Pasages,	1 ck.		
Stearine—			
Boston,	2 cks.		
Strontia—			
Amsterdam,	2 t. 2 c.	£19	
Sulphur—			
Trinidad,	2 t. 13 c.	£15	
Philadelphia,	100 4	326	
Boston,	150 3	488	
Pt. Natal,	1	7	
Bombay,	2 8	2 q. 13	
Sulphuric Acid—			
Pernambuco,	3 c.	£6	
Durban,	26 cks.	40	
Superphosphate—			
Las Palmas,	42 t.	£130	
Valencia,	25	59	
Ancona,	25	62	
Treacle—			
Antwerp,	57 cks. 5 tes. 25 hf.-pns		
Christiania,	25 brls.		
Malta,	10 cs.		
Rotterdam,	40		
Terneuzen,	22 15	66	
Teneriffe,			
Turpentine—			
Calcutta,	200 dms.		
Ceara,	10		
Lagos,	20		
Varnish—			
Calcutta,	4 cs.		
Cape Town,	4		
Genoa,	6 cks.		
Malta,	1 bx.		
Piceus,	1		
Rotterdam,	22		
Volo,	1		
White Lead—			
Durban,	70 kgs.		
Syra,	5 cks.		
Whiting—			
Ceara,	20 brls.		
Hamburg,	20		
M. Video,	300 cs.		
Valparaiso,	100		
Zinc Chloride—			
Bombay,	25 t. 10 c. 1 q. £380		
Zinc Crystals—			
Antwerp,	8 c. 2 q. £6		

MANCHESTER.

Week ending January 3rd.

Alum—			
Alexandria,	13 brls.		
Ammonium Carbonate—			
Treport,	7 cks.		
Aniline Oil—			
Antwerp,	10 dms.		
Rouen,	5 3 cks.		
Carbolic Acid—			
Rotterdam,	3 cks.		
Rouen,	2c8 brls.		
Caustic Soda—			
Malaga,	30 dms.		
Rouen,	6		
Creosote—			
Antwerp,	20 cks.		
Creosote Salt—			
Rotterdam,	58 cks.		
Linseed Oil—			
Alexandretta,	10 brls.		
Painters' Colours—			
Hamburg,	2 cks.		
Paraffin Wax—			
Hamburg,	5 bgs.		
Pitch—			
Antwerp,	416 t. 17½ c.		
Dunkirk,	209 3		
Pyridine Oil—			
Hamburg,	4 cks.		
Soap—			
Hamburg,	2 pns.		
Tar Oil—			
Antwerp,	11 dms.		
Rotterdam,	10		

HULL.

Week ending December 29th.

Alkali—			
Stettin,	15 cks.		
Ammonium Sulphate—			
Rotterdam,	340 bgs.		
Stettin,	240		
Bleaching Powder—			
Hango,	87 cks.		
New York,	51		
Stettin,	84		
Caustic Soda—			
Danzig,	100 dms.		
Hango,	25 2 cks.		
Libau,	65		
Chemicals (otherwise undescribed)			
Amsterdam,	20 cks. 5 pkgs.		
Bremen,		1 cs.	
Christiania,	4 74	954 slbs.	
Copenhagen,	27 40	1 cs.	
Drontheim,	10		
Danzig,	20 10		
Gothenburg,	167 43		
Hango,	100		
Hamburg,		1	
Reval,	10	1	
Rouen,		1	
Rotterdam,	4		
Riga,	2 100		
Stettin,	5		
Cottonseed Oil—			
Antwerp,	742 c.		
Bremen,	263		
Christiania,	20		
Danzig,	152		
Gothenburg,	45		
Konigsberg,	34		
Rotterdam,	702		
Stettin,	34		
Dyestuffs (otherwise undescribed)			
Christiania,	6 bgs.		
Danzig,	7 cks.		
Riga,	4		
Linseed Oil—			
Amsterdam,	500 c.		
Antwerp,	34		
Bergen,	37		
Christiania,	147		
Drontheim,	50		
Gothenburg,	7		
Stavanger,	34		
Painters' Colours—			
Amsterdam,	6 cks. 1 pkge.		
Antwerp,	14	1 cs.	
Bremen,	1	3	
Bergen,	4		
Christiania,	2		
Danzig,	19 1		
Gothenburg,		1	
Hango,	1		
New York,	231		
Rouen,	13 1		
Rotterdam,	63		
Riga,	5		
Stettin,	20		
Pitch—			
Antwerp,	250 t.		
Dunkirk,	86		
Salt—			
Copenhagen,	5 t.		
Soap—			
Bergen,	3 cs.		
Tar—			
Amsterdam,	20 cks.		
Copenhagen,	6		
Hamburg,	10		
Stettin,	10 cs.		
Treacle—			
Bergen,	10 cks.		
Christiania,	135		
Drontheim,	15		
Turpentine—			
Antwerp,	1 dm.		
Varnish—			
Amsterdam,	1 ck.		
Copenhagen,	1 cs.		

GLASGOW.

Week ending January 3rd.

Ammonium Sulphate—			
Halifax,	26 t. 11 c.	£300	
Italy,	20 19½	242	
Hamburg,	75½	834	
Bleaching Powder—			
Calcutta,	44 t. 19 c.	£540	

Coal Products—

Aniline			
Portland,	6¼ c.	£56	
Aniline Dyes			
Calcutta,	4 c.	£50	
Creosote Oil			
B. W. Indies,	42 t. 15 c.	£118	
Pitch			
St. Nazaire,	554 t. 12 c.	£920	
Antwerp,	100 13	148	
Christiania,	63	140	
Tar			
Portland,	73 t.	£160	
Dyestuffs—			
Alizarine			
Portland,	6 t. 15¼ c.	£73	
Argols			
New York,	30 t.		
Dyestuffs (otherwise undescribed)			
Adelaide,	2½ c. £66. 18s.		
Glucose—			
New York,		£216	
Cape Colony,	6 t. 2¼ c.	62	
Linseed Oil—			
Penang,	930 glns.	£—	
B. W. Indies,	1 t. 19¼ c.	20	
Jamaica,	1 t. 3½	28	
Portland,	12 19¼	263	
Calcutta,	1 14½	50	
Halifax,	8 12¼	230	
Natal,	300 glns.	360	
Litharge—			
Amsterdam,	4 cks.	£16	
Manganese—			
Antwerp,	3 t. 5¼ c.	£30	
Rotterdam,	8 5	78	
Ochre—			
Calcutta,	3½ t.	£24	
Paint—			
Japan,	10 t. 15¼ c.	£145	
Penang,	1 3¼	—	
Shanghai,	4 cks	75	
Rotterdam,			
Painters' Colours—			
Shanghai,		£89	
Calcutta,		100	
Havana,	1 t. 6½ c	28	
Cape Colony,		49	
Natal,		96	
Paraffin Wax—			
Algoa Bay,	6 t. 4 c.	£—	
Japan,	5 15½		
Shanghai,	1 13½		
Italy,	63 5	1,434	
Fiume,		273	
Cape Colony,	4 9	160	
Potassium Bichromate—			
Portland,	26 t. 1¼ c.	£970	
Italy,	25 18¼	1,030	
Rotterdam,	12 cks.	200	
Japan,	5 t. 19½	224	
New York,	38 17¼	1,388	
Antwerp,	15 1¼	600	
Potassium Prussiate—			
Japan,	11 c.	£—	
New York,	10 t. 5	852	
Rosin—			
Rotterdam,	15 brls.	£28	
Salt—			
Shanghai,	5 t. 2½ c.		
Soap—			
B. W. Indies,	3 t. 15 c.	£65	
Sodium Bichromate—			
Italy,	14 t. 7¼ c.	£464	
Tallow—			
Rotterdam,	9 t. 19 c.	£337	
Treacle—			
Christiania,	13 t. 1 c.	£161	
Varnish—			
Cape Colony,	5 c.	£20	
White Lead—			
Japan,	2 t. 6¼ c.	£—	
Cape Colony,	3	55	
Natal,	1 16¼	30	

TYNE.

Week ending December 29th.

Alkali—			
Christiania,	6 t. 3 c.		
Rotterdam,	2 12		
Leghorn,	8		
Ammonia—			
Aarhus,	11 c.		
Blanc Fixe—			
Copenhagen,	6 t. 8 c.		

Bleaching Powder—

Antwerp,	76 t. 8 c.		
Hamburg,	16 8		
Genoa,	6		
Rotterdam,	5 18		
Drontheim,	10		
Copenhagen,	34 6		
Borax—			
Aarhus,	5 c.		
Caustic Soda—			
Antwerp,	22 t. 10 c.		
Hamburg,	50 19		
Rotterdam,	17		
Ancona,	20 8		
Copenhagen,	2 12		
Genoa,	11 14		
Litharge—			
Hamburg,	10 c.		
Christiania,	11		
Magnesia—			
Hamburg,	2 c.		
Genoa,	5		
Oxalic Acid—			
Genoa,	6 c.		
Paint—			
Antwerp,	8 c.		
Ancona,	2		
Plumbago—			
Aarhus,	5 c.		
Slag—			
Rotterdam,	72 t.		
Soda—			
Aalborg,	13 t. 15 c.		
Nykjobing,	5		
Genoa,	25 12		
Laurvig,	5 3		
Rotterdam,	27 2		
Aarhus,	10		
Drontheim,	35 11		
Soda Ash—			
Konigsberg,	55 t. 7 c.		
Aalborg,	20 8		
Antwerp,	5 6		
Hamburg,	5		
Copenhagen,	10		
Soda Crystals—			
Christiania,	23 t. 5 c.		
Sodium Hyposulphite—			
Genoa,	2 t. 5 c.		
Copenhagen,	2 5		
Sodium Silicate—			
Drontheim,	2 t. 2 c.		
Sodium Sulphite—			

PRICES CURRENT.

WEDNESDAY, JAN. 9th, 1895.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

Acids:—		L. S. d.		L. S. d.		
Acetic, 25 % and 40 %	per cwt.	7/-	& 10/6	Lime, Acetate (brown)	per ton	6 0 0
" Glacial	"		50/-	" (grey)	"	9 15 0
Arsenic S.G., 2000°	"	0 15 0		Magnesium (ribbon and wire)	per oz.	2 3
Fluoric	per lb.	0 0 3 1/4		" Chloride (ex ship)	per ton	2 10 0
Muriatic (Tower Salts), 30° Tw.	per bottle	0 0 10		" Carbonate	per cwt.	1 17 6
" (Cylinder), 30° Tw.	"	0 3 0		" Hydrate	per ton.	17 0 0
Nitric 80° Tw.	per lb.	0 0 1 1/4		" Sulphate (Epsom Salts)	per ton	3 0 0
Nitrous	"	0 0 1 1/4		Manganese, Sulphate	"	17 15 0
Oxalic	nett	0 0 3 3/4		" Borate	per cwt.	2 15 0
Phosphoric, 1750°	"	0 0 11		" Ore, 70 %	per ton	4 5 0
Picric	"	0 1 0		Methylated Spirit, 61° O.P.	per gallon	0 1 10
Sulphuric (fuming 50 %) .	per ton	15 10 0		Naphtha (Wood), Solvent	"	0 3 0
" (monohydrate)	"	5 10 0		" Miscible, 60° O.P.	"	0 3
" (Pyrites, 168°)	"	3 0 0		Oils:—		
" 150°	"	1 5 0		Cotton-seed	per on	18 10 0
" (free from arsenic, 145°)	"	1 6 0		Linseed	"	21 10 0
Sulphurous (solution) S.G. 1025	"	3 0 0		Petroleum, American	per gallon	0 0 5 1/2
Tannic (pure)	per lb.	0 1 0		Stearine	per ton	26 0 0
Tartaric	"	0 0 11		Phosphorus (yellow)	per lb.	0 2 2
Arsenic, white powdered	nett	14 7 6		" (red)	"	0 2 8
Alum (loose lump)	"	4 17 6		Potassium (metal)	per oz.	0 3 7
Alumina Sulphate (pure)	"	4 17 6		" Bichromate	nett	per lb. 0 0 4 1/2
Aluminoferic	"	2 7 6		" Carbonate, 90% (ex ship)	per ton	16 15 0
Aluminium	per lb.	0 3 0		" Chlorate	per lb.	0 0 5 1/2
Ammonia, Anhydrous	"	0 1 4		" Cyanide, 98%	"	0 2 1
" 880=28° B.	per lb.	0 0 3		" Hydrate (Caustic Potash) 80/85 %	per ton	21 10 0
" =24° B.	"	0 0 2 1/2		" (Caustic Potash) 75/80 %	"	20 0 0
" Carbonate	nett	0 0 3 1/4		" (Caustic Potash) 70/75 %	"	19 10 0
" Muriate	per ton	23 10 0		" Nitrate (refined)	per cwt.	1 2 6
" (sal-ammoniac) 1st & 2nd	per cwt.	39/- & 37/-		" Permanganate	per cwt.	3 0 0
" Nitrate	per ton	41 0 0		" Prussiate Yellow	per lb.	0 0 10
" Phosphate	per lb.	0 0 10 1/2		" Sulphate, 90 % (ex ship)	per ton	9 15 0
" Sulphate (grey) London	per ton	10 15 0		" Muriate, 80 % (do.)	"	8 7 6
" (grey) Hull	"	10 12 6		Silver (metal)	per oz.	0 2 3 1/2
Aniline Oil (pure)	per lb.	0 0 5 1/4		" Nitrate	"	0 2 10
Aniline Salt	"	0 0 4 1/4		Sodium (metal)	per lb.	0 3 0
Antimony	per ton	32 15 0		" Carb. (refined Soda-ash) 48 %	nett	per ton 4 15 0
" (tartar emetic)	per lb.	0 0 9 1/2		" (Caustic Soda-ash) 48 %	"	4 0 0
" (golden sulphide)	"	0 0 10		" (Carb. Soda-ash) 48 %	"	4 0 0
Barium Chloride	per ton	6 10 0		" (Alkali) 58 %	"	4 0 0
" Carbonate (native)	"	3 5 0		" (Soda Crystals)	"	2 5 0
" Sulphate (native levigated)	"	45/- to 75/-		" Acetate (ex-ship)	"	14 5 0
Bleaching Powder, 35 %	nett	7 5 0		" Arseniate, 45 %	"	11 0 0
" Liquor, 7 %	"	3 10 0		" Chlorate	per lb.	0 0 7 1/2
Bisulphide of Carbon	"	11 5 0		" Borate (Borax)	net, per ton	20 0 0
Chromium Acetate (crystal)	per lb.	0 0 6		" Bichromate	per lb.	0 0 3 1/2
Calcium Chloride	per ton	2 2 6		" Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton	10 0 lots	10 0 0
China Clay (at Runcorn) in bulk	"	17/6 to 30/-		" (74 % Caustic Soda)	"	8 17 6
Coal Tar Products and Dyes:—				" (70 % Caustic Soda)	"	7 17 6
Alizarine (artificial) 20 %	net per lb.	0 0 8		" (60 % Caustic Soda)	"	6 17 6
Magenta	"	0 3 9		" (60 % Caustic Soda, cream) (f.o.b.)	"	6 17 6
Anthracene, 30 % A, f.o.b. London	per unit per cwt.	0 1 1		" Bicarbonate	"	5 12 6
Benzol, 90 % nominal	per gallon	0 1 0		" Hyposulphite	"	5 10 0
" 50/90	"	0 1 1		" Manganate, 30%	"	16 0 0
Carbolic Acid (crystallised 40°)	per lb.	0 0 5 1/4		" Nitrate (95 %) ex-ship Liverpool	per cwt.	0 8 10 1/2
" (crude 60°)	per gallon	0 1 8		" Nitrite, 98 %	per ton	29 0 0
Creosote (ordinary)	"	0 0 2		" Phosphate	"	15 0 0
" (filtered for Lucigen light)	"	0 0 2		" Silicate (glass)	per ton	5 2 6
Crude Naphtha 30 % @ 120° C.	"	0 0 5		" (liquid, 100° Tw.)	"	4 5 0
Grease Oils, 22° Tw.	per ton	2 10 0		" Stannate, 40 %	per cwt.	3 2 0
Pitch, f.o.b. Liverpool or Garston	"	1 13 0		" Sulphate (Salt-cake)	per ton.	0 17 6
Solvent Naphtha, 90 % at 160°	per gallon	0 1 2 1/2		" (Glauber's Salts)	"	1 5 0
Lucigen" and "Wells Oils	"	0 0 2 1/2		" Sulphide	"	8 10 0
Copper	per ton	40 10 0		" Sulphite	"	5 7 6
" Sulphate	"	15 7 6		Strontium Hydrate, 100%	"	8 10 0
" Oxide (copper scales)	"	39 0 0		Sulphocyanide Ammonium, 95 %	per lb.	0 0 7
Glycerine (crude)	"	15 0 0		" Barium, 95 %	"	0 0 5
" (distilled S.G. 1250°)	"	40 0 0		" Potassium	"	0 0 7 1/2
Iodine	nett, per oz.	0 0 9		Sulphur (Flowers)	per ton.	7 5 0
Iron Sulphate (copperas)	per ton	1 5 0		" (Roll Brimstone)	"	5 5 0
" Sulphide (antimony slag)	"	2 0 0		" Brimstone: Best Quality	"	3 15 0
Lead (sheet) for cash	"	10 15 0		Superphosphate of Lime (26%)	"	2 7 6
" Litharge Flake (ex ship)	"	13 10 0		Tallow	"	24 10 0
" Acetate (white)	"	24 15 0		Tin Crystals	per lb.	0 0 6
" brown "	"	15 10 0		" English Ingots	"	63 10 0
" Carbonat: (white lead) pure	"	16 0 0		Zinc (Spelter)	per ton	14 7 6
" Nitrate	"	20 0 0		" Chloride (solution, 100° Tw.)	"	5 7 6

THE CHEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

No. 400.

SATURDAY, JANUARY 19, 1895.

Vol. XVI.

Contents.

	PAGE		PAGE
Progeny of 1894.....	33	Setting for Vitriol Pans	56
Laboratory Hints and Appliances..	35	Liverpool Mineral Market	57
Townley Ironworks.....	37	Tar and Ammonia Products	57
"Lancaster" Engineering	38	Report on Manure Material.....	57
Works	40	Miscellaneous Chemical Market ..	57
es & Taps for Chemical Works	40	Liverpool Oil and Colour Market..	57
Book Shelf.....	40	Tyne Chemical Report.....	57
Centrifugal Separator	41	West of Scotland Chemicals	57
uary, 1894	41	Hull Paint, Oil, and Colour Report	58
or Makers' Column	45	New Companies.....	58
Commer Automatic Drying	47	The Patent List	58
achines.....	47	Gazette Notices.....	58
Paints, and Soap	48	Imports	58
iniscences of John Dalton	54	Exports	61
er's Patent Dryer	56	Prices Current.....	64

Notices.

All communications for the *Chemical Trade Journal* should be addressed, and Cheques and Post Office Orders made payable to—

DAVIS BROS., 32, Blackfriars Street, MANCHESTER.

Our Registered Telegraphic Address is—

"Expert, Manchester."

The Terms of Subscription, commencing at any date, to the *Chemical Trade Journal*,—payable in advance,—including postage by any part of the world, are as follows:—

Yearly (52 numbers) 12s. 6d.

Half-Yearly (26 numbers) 6s. 6d.

Quarterly (13 numbers) 3s. 6d.

Readers will oblige by making their remittances for subscriptions by Postal or Post Office Order, crossed and payable to "Davis Bros."

Communications for the Editor, if intended for insertion in the current week's issue, should reach the office not later than **Tuesday morning**.

Articles, reports, and correspondence on all matters of interest to the chemical and allied industries, home and foreign, are solicited. Respondents should condense their matter as much as possible, on one side only of the paper, and in all cases give their names and addresses, not necessarily for publication. Sketches should be on separate sheets.

Advertisements.

Unpaid Advertisements of Situations Vacant, Premises on Sale or To be Let, Miscellaneous Wants, and Specific Articles for Sale by Private Contract are inserted in the *Chemical Trade Journal* at the following rates:—

30 Words and under..... 2s. 6d. per insertion
Each additional 10 words 6s. 6d.

Trade Advertisements, Announcements in the Directory Columns, and all Advertisements not prepaid, are charged at the Tariff rates, which will be forwarded on application.

Advertisements intended for insertion in the current week's issue should reach the office by **Wednesday morning** at the latest.



IT is necessarily with some unpleasant foreboding that we once more address ourselves to the annual task of affording our readers something like an "index" of the past year. But though our annual review has little to relieve the dull monotony of chronicling disappointments and reverses, there is no reason to suppose that we shall always have to face so uncongenial a task as we do in recording the principle events of the past year, which have been of peculiar interest to our readers. Though the chemical industries have suffered much by the disturbances in the coal trade, the year as a whole has not been worse than its predecessor, if as bad. In regard to the state of trade we have already in some measure expressed our opinions, and, considering all things, we feel we cannot do better than dismiss this subject by merely referring to the proverbial advice about spilt milk and the advantages of saying as little as possible. The black side of things is more often brought into prominence than the bright, but the past year has not been without its rays of relief in the form of

ADVANCES IN SCIENCE.

In dealing with these we shall of course confine ourselves to those which bear upon chemistry and the sciences which are applied to industries. First and foremost there has been the reported discovery of two new elements. In our review of 1892 we referred to the work of Lord Rayleigh upon the densities of Hydrogen and Oxygen, as the partial outcome of which Lord Rayleigh and Professor Ramsay announced at the meeting of the British Association, held at Oxford in August last, that they had discovered a new constituent of the air. At present it remains an open point whether the new substance has been really isolated from the air, or has been formed under the conditions which obtained at the time of its discovery. Owing to the existence of these doubts a French organ has facetiously suggested that the body, whatever it may be, should be called "Oxfordgen." The *Bulletin de la Société Chimique*, however, reports a more promising discovery by Dr. Bayer, who claims to have found in the residual liquors of the older process of extracting Aluminium from Bauxite, an element which fills a vacant place in the Nitrogen group of Mendeleeff's periodic arrangement. Certain of its reactions have been studied, with the result that it has been found to be precipitated by sulphuretted hydrogen in an alkaline solution, and there are undoubtedly good reasons for Dr. Bayer's assumption.

In general research a considerable amount of useful work has been done. As a stimulus to further effort, the newly founded Salters' Company Research Fellowships are likely to prove highly beneficial, while L. Mond's munificent gift in endowing the Davy-Faraday Research Laboratory has enabled research chemists to find a long-wanted but abiding asylum.

Professor Dewar and M. Moissan have both made important advances in their respective spheres, while Pictet has obtained instructive results from the congelation of sulphuric acid. Professor Lewes has been giving attention to the action of heat on Ethylene, and Professor Thorpe and J. W. Roger have been studying the viscosity of liquids in relation to chemical constitution. The thermo-electric properties of salt solutions have engaged the attention of G. F. Emery; Messrs. Marsh and Gardner have been studying the Terpenes, while J. J. Sudborough has been given special attention to the chlorination of aniline. The completion of Foster Morley and Muir's revision of "Watt's Dictionary" has also been one of the achievements of the year.

Though a great deal of good work in other matters has been carried out during the past twelve months, there is no need to mention it here, as by reason of its nature it can be more fittingly referred to under the heading of

TECHNOLOGY.

Educational facilities have been developed in a most satisfactory way, notably by the additions to the Durham College of Science, and in the form of new technical schools which have been opened in numerous places where industrial operations are carried on. Pre-existing schools have also in most cases a good record to show, particularly the Manchester Municipal Technical School and the City and Guilds of London Institute. In the latter the number of students examined was 1,377 in excess of 1893, while the total number of students was larger than ever. The past year has also brought us information concerning a new departure at the Brooklyn Polytechnic, N.J., where Dr. P. T. Austen is devoting special attention to the development of classes in practical chemistry and chemical engineering. Coming nearer home, the Schorlemmer Memorial Laboratory at Owens College Manchester, is now virtually *un fait accompli*. Agricultural education has also received considerable attention, experimental farms and practical agricultural schools having been established in Lancashire and Cheshire.

One of the technological features of the year has been the growth of electro-chemical processes, but as these (along with the most important technological events of the year) have been dealt with from time to time in these columns, there will be no need to take them *seriatim*. There are, however, a few matters which call for individual mention. Dr. Haldane's work on the causes and prevention of suffocation in mines, promises to prove of great importance to the mining industry. Dyers should take note of the report made to the British Association on the action of light on colours, while Drs. Perkin and Hummel have been engaged in interesting investigations connected with the colouring principles of Mangkoudu and Ventilago Madraspatna; Madder colouring matters have also formed the subject of further enlightenment by Dr. Schunck and L. Marchlewski. The oil industry has had the benefit of some helpful work on the Properties of Oxidised Linseed Oil. Papermakers will be interested in the further developments of Cellulose Thiocarbonates; and agricultural analysts will be pleased to learn the results which have been obtained from researches upon the determination of the Mineral Plant Food in Soils.

The concentration of oil of vitriol is a subject which continues to receive considerable attention from technologists, in spite of all that has been done in this direction. Sewage schemes have made on the whole satisfactory headway, and are just now very plentiful. Time, however, can only show how successful they will prove to be. Bacteriology is fast making headway, special classes now being held at King's College, London, while the London County Council have in hand a bacteriological laboratory. With these facilities for extending knowledge in this direction, it is probable that we shall before long find bacteriology playing an important part in many

CHEMICAL AND ALLIED INDUSTRIES.

We should be departing from the position which we took up at the outset, if we were to say much here about the alkali trade. The subject has received considerable attention in these columns, comparatively recently, and can therefore be left alone, while we turn our attention to other matters.

The coal industry, though much upset by labour disputes, does not seem in any danger of extinction, to judge by the discoveries of coal

which have been made during the past year, some of which have of more than ordinary importance. Early in the year a discovery of petroleum oil was made, but though a company was started on strength of the "find," very little has been heard of either the company. Considering the depressed state of the Scotch industry, this fact is perhaps not considered altogether unsatisfactory north of the Tweed.

The combination of calico printers has been another feature of the year, and it would truly appear that there was good cause for such step being taken. That combination is in certain cases desirable has been shown to some advantage in the case of sulphate of ammonia manufacturers, and cement manufacturers have now decided to somewhat similar means for protecting their own interests.

The proposed regulations for the control of unhealthy occupations which were pending at this time last year, have come into force during the last few months, but as far as white lead and chemical works concerned they are not likely to prove very onerous to employers. In some cases the new rules are very little different from those which were in general use prior to the Departmental Inquiry, while the report of the Chief Inspector of Alkali Works has shown that chemical manufacturers are doing much to prevent the discharge of noxious vapours. The flashpoint of mineral oils and the smoke question both have been prominently brought forward during the past year, and appear to be slowly advancing towards a solution of their respective difficulties. The smoke question, at all events, is likely to be solved, again, seeing that both the Chamber of Commerce and the Manchester Section of the Society of Chemical Industry have again taken this matter up. In connection with the latter named society is interesting to note in passing that in November last a section was established in New York.

A goodly number of familiar firms have turned into limited companies, notably, Messrs. T. Hardman and Sons Limited, J. Nicholson and Sons Limited, the North Dean Chemical Company Limited, Messrs. Tunstall Limited, while the Dee Oil Company has been reconstructed. Among the new ventures we have the Electro Chemical Company Limited, the British Aluminum Company Limited, Somerset Petroleum Wells Company Limited, the Hartley and Linsop Oil Syndicate, and many others, including two important nitrate companies, viz., The New Llagunas Syndicate Limited and San Patricio Nitrate Company Limited.

In the matter of legal cases which have been either interesting or important, there has been the conclusion of the Lanolin case, *Deacon v. The Salt Union*, *The United Alkali Co., Ltd. v. Simpson*, *Reddaway v. Banham*, in addition to the two big chemical legal events of the year, the Cordite case and the Cyanide Patent case, the latter of which is not yet finally settled.

In following out the method which we inaugurated last year, making a brief summary of the

PATENTS IN 1894,

we have to chronicle another record year as far as regards numbers. As many as 25,372 applications have been filed, an advance on the year of 270. These are the official returns, but owing to a somewhat singular coincidence, no application was made in the case of number 18,834, so that the actual number of patents applied for was 25,371. Confining our attention to chemical and co-related patents, we get a very fair idea of the numerical proportions which the different classes of patents bear to each other, can be gathered from the following:—Of applications for letters patent for *Chemical Processes* there have been 200; *Chemical Plant and Apparatus*, 42; *Electro-Chemical Processes*, 42; *Electro-Chemical Apparatus*, 19; *Paints and Pigments*, 43; *Sewage*, 42; *Artificial Fuel*, 19; *Oils and Fats*, 30; *Smoke Prevention*, 27; *Soap*, 26; *General Hygiene*, 19; *Explosives*, 18; *Manures*, 17; *Boiler Disincrustants*, 10; *Artificial Stone*, 7. By comparing these figures with those given in *Journal*, No. 348, p. 35, an estimate of those branches of chemical industry which have received most attention from investors can readily be made.

The year which recently ended was by no means a bad one for the chemical trades as far as regards the work done in the way

LEGISLATION.

y matters which threatened to restrict these trades were floating air, but mainly due to the able work of the Chambers of Commerce most of them have been satisfactorily disposed of. The only importance has been the Notice of Accidents Act. Among the bills which have been and are on the *tapis* the most important is the Railway and Canal Traffic Bill, next to which comes the Coal Mines (Safety) Bill, and another is the Food and Drugs Act Amendment Bill. While on legal matters reference may be fittingly made to the growth of Arbitration Chambers, one of which has, during the year, been established in Birmingham.

have now fairly well covered the subjects usually touched upon in this review, and have only a few

MATTERS OF GENERAL INTEREST

deal with. 1895 has at last put the Labour Commission behind it to judge by the benefits which have resulted we can be content with it there. As an additional means of accomplishing the solution of the smoke difficulty, the Association which has done such good work in connection with experiments on Air and Fog in Manchester has places in no way relaxing its efforts to get purer air in the cities. During the past year 31 Electric Lighting Provisional Orders have been applied for by different corporate bodies and authorities which is an advance of one on last year. The "Chief Agricultural Analyst" has been appointed under the Fertilizer and Feeding Act, and as this post has been conjoined to that of Chief of the State House Laboratory, a new and well-equipped Government laboratory is about to be built.

have thus arrived at a point where we have to wait for the year to unfold and reveal what it has in store. Last year we congratulated 1894 would afford greater scope for congratulation. In some points it no doubt has done so, while with regard to incidents which do not afford pleasant reflection we can perhaps find some slight solace from the fact that the present year can bring anything worse than has already been experienced.

Laboratory Hints and Appliances.

SPENT OXIDE EXTRACTING APPARATUS.

is a very simple, handy, and ingenious piece of apparatus, though originally designed for the extraction of sulphur from spent oxide, is likely to be found useful for many other purposes. The operation is effected on Soxhlet's principle. The complete arrangement is shown in the illustration. The flask is the novel portion. It



with a ground-glass stopper, through which a tube passes. The tube is connected to the vertical condenser, the lower part of which is inserted into the flask. At its lower extremity it is contracted, and the opening is fitted with a plug of asbestos, or glass wool. Just above the stopper, but inside the flask, is a hole in the side of this tube, through which the solvent, such as carbon bisulphide, passes in the

form of vapour, and becoming converted into the liquid form again in the condenser, trickles down upon the spent oxide in the small tube. By this means the oxide is quickly extracted, being continually treated with a stream of pure solvent. This compact, little contrivance is being introduced by Messrs. Fred. Jackson and Company, Half-Moon-street, Manchester.

AUTOMATIC BENZOLINE BURNER.

In our illustration we show a very convenient burner for general heating in a laboratory or chemical works. It is the patent of Herr Barthel, and is termed the "Climax" Roarer. It consists of a large benzoline container, made of stout brass, from which an automatic blast burner on the roarer principle is fed. There is no wick, the



benzoline being forced into the long feed tube by air pressure from an india-rubber hand ball, and vaporized in the upper part of the valve to any required degree.

The English agents are Messrs. O. Berend and Co., 61, Fore-street, London. Explicit instructions are given with each burner.

AN ALUMINIUM SCALE THERMOMETER.

This is one of the latest ideas in thermometers, which has been patented by the well-known thermometer and chemical apparatus manufacturer, Herr Wilhelm Uebe, of Zerbst-Anhalt. The thermometer, which we illustrate, is made in a great variety of forms. It has the usual outward appearance, the scale of aluminium being enclosed in a glass sheath. It is remarkably light, and yet strong. The scale is easily read, a special backing being employed to facilitate this process. The scale is held in position in a most ingenious manner. By contracting the glass sheath at the top, the head of the scale is enclosed in the top bulb and kept in position. At the same time, prior to fixing, it can be adjusted with great exactitude. This same principle is applied to both chemical and medical thermometers. Herr Uebe has obtained medals or awards at Chicago, Antwerp, and Rome. At the latter place these thermometers attracted a great deal of attention during the sitting of the Medical Conference last year.

AN ELECTRIC FURNACE FOR THE LECTURE TABLE.

The reduction of the refractory earths, such as alumina, glucina, &c., or a quick manufacture of small quantities of their alloys, must have often presented serious difficulties to demonstrators whom the oxyhydrogen flame refuses to satisfy.

The above novel contrivance is now being supplied by the originator, Mr. H. N. Warren, of Liverpool, to most of the leading universities. It consists, so far as the furnace is concerned, of an outward jacket of caloric cement, through the bottom of which passes a plumbago tube, while a rod of the same material is inserted through the top of the furnace, and so regulated as to allow the arc produced to play upon the compound placed in the cavity.

Connected to the furnace is a small plant of special construction, and capable of evolving a voltage of 100° intensity, which can be arranged for amperical value as required. Nearly every substance brought



within the cavity is at once reduced and a corresponding button of metal obtained. The furnace is also arranged with a side communication whereby a small arc is obtained for the reduction of minerals. In this instance the mineral to be tested is first reduced to powder and made into a paste with a solution of pyroxylin, and afterwards formed into a small stick. On bringing the same into contact with arc between the carbon points reduction at once takes place with the production of a metallic bead. The electric plant attached is perfectly automatic, so that the furnace can be put into operation at a moment's notice.

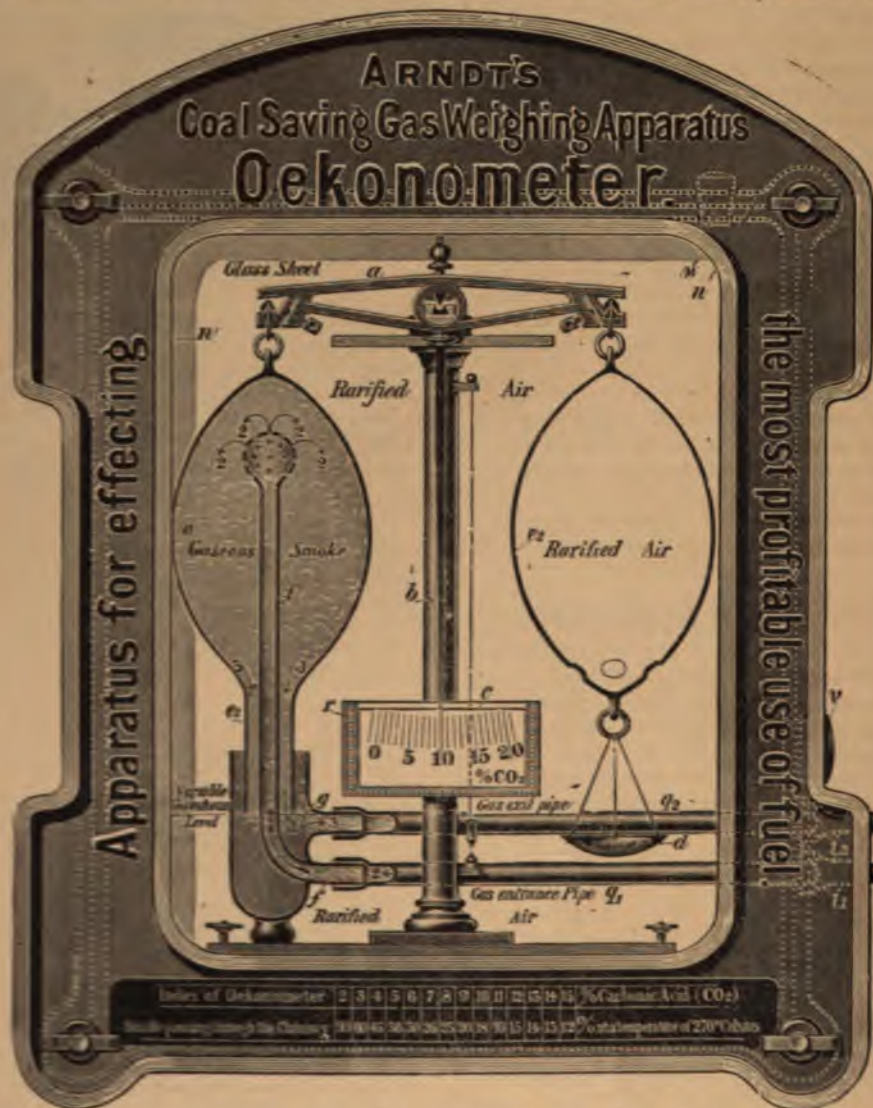
ARNDT'S OEKONOMETER.

This is an apparatus for showing how much air is to be supplied to furnaces so as to avoid the presence of an excess.* It is based on the fact that a

The sole licensee and manufacturer for Great Britain is Mr. J. Wilkes, 10, Cité Riverin, Paris, who, we understand, is shortly to establish a London office.

A TELESCOPIC BUNSEN BURNER.

Among the many Bunsen burners, Emil Greiner, of William-street, New York, has introduced a very simple effectual burner in the shape of a telescopic Bunsen. It can be extended or shortened at will and placed at any angle, position either upwards, downwards, or sideways. According to the position of the telescope slide the air is controlled by an automatic device. Another advantage is its entire safety, as a flame cannot catch back, inasmuch as the gas inlet is



definite percentage of carbon dioxide should be in the flue gases if the combustion of the fuel has been complete. The apparatus consists of a sensitive balance (*a*), with an open reservoir (*r*) of about half-a-litre capacity. On the opposite side is a hollow compensation body, which can be adjusted to work to a certain percentage with weights placed in the pan suspended from it. As carbon dioxide is about 1.5 times as heavy as the atmospheric air and the gases in smoke, it follows that the gaseous smoke, which continually fills the reservoir (*r*), must be heavier in proportion to the amount of carbon dioxide present therein. The scale (*s*) is so divided that the movement of the pointer (*b*) from one dividing line to another corresponds with the volume per cent. of the gaseous smoke to be weighed. Therefore the amount of carbon dioxide in the smoke can be read off immediately at all times.

tested from side draught. Though a burner possessing these advantages would naturally cause one to think it necessarily be a complicated arrangement, this is not the case. One of the chief recommendations of this burner is its extreme simplicity of construction. In consequence it does not need to be "known" before those used to the old familiar form can appreciate its advantages.

Greiner also makes an automatic zero burette which enables a chemist to fill it from the bottle containing the titration liquid by a simple and clean method, at the same time to adjust the burette automatically to the zero mark. It consists of a syphon tube which is tightly in the bottle by a rubber stopper, a clamp fastened to the neck of the bottle holding the burette of 25 cc. capacity, with a rubber

to same. The burette is connected with the syphon tube by piece of pure gum tubing and suction is commenced through per tube, when the liquid will begin to flow into the burette as the suction is continued, which is to be done until the liquid has passed the zero mark; then the suction is stopped and the liquid will flow back into its bottle, leaving same in the exactly at the zero mark and measuring can begin at once. In series where one or more certain volumetric solutions are frequently used, this burette will prove of great value, as it is always ready for work and can easily be kept air-tight when not in use.

LIQUID SULPHURETTED HYDROGEN.

is a new adjunct of the laboratory, introduced by Messrs. Tatlock, of Hutton Garden, London. They supply liquid

H_2S compressed into specially prepared steel cylinders, each containing one pound of liquid, equal to 11 cubic feet of gas at atmospheric pressure. The cylinders have been tested to 1,500 lbs. per square inch, and the pressure when filled with liquid H_2S never exceeds 300 lbs. per square inch. The valve has been specially designed in view of its use in chemical laboratories, and will be found to be absolutely tight. The gas being prepared from sodium sulphide by sulphuric acid, is pure and dry.

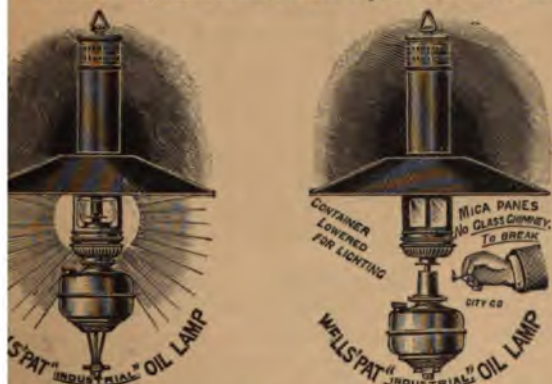
Compressed H_2S will be found to be much more economical than the present method of generating it from sulphide of iron, more

and always ready for use. They also supply it in larger quantities up to 28 lbs.

THE INDUSTRIAL OIL LAMP.

lamp is constructed on the regenerative principle with central burner. It gives a light of 100 candle power, and burns 8 to 9 hours, using about $3\frac{3}{4}$ pints of petroleum. The usual glass chimney or reflector is done away with, and a metal-framework carries three mica plates or panes which are practically indestructible; should new ones be required they are fixed in a moment as they simply spring into place. The reflector is 18 inches diameter, of sheet iron and is in one piece and enamelled.

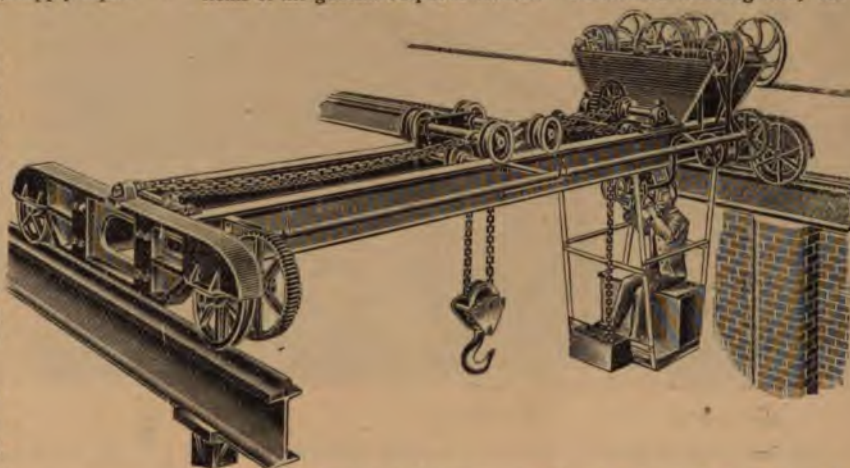
Fig. 1 shows the lamp lighted and at work. Fig. 2 shows the operation



ing. By pressing the spring at the bottom of the lamp (see Fig. 1) the container or reservoir drops down and rests on the cross bar, at the same time entering the central draught tube. After lighting, the container is lifted up again and the spring returns it to its former position, leaving the lamp as shown in Fig. 1. For works and laboratories where gas is either not available or inconvenient, these lamps, which are being introduced by Messrs. Jones, and Company, 19, Castle-street, Liverpool, will be found very valuable. Many hundreds are already in use.

THE TOWNLEY IRONWORKS.

THESE works occupy an extensive site in Gibbon-street, Manchester. Prior to establishing the Townley Ironworks some years ago, Mr. W. H. Peacock was for many years connected with the well-known firm of Beyer, Peacock and Co., his identification with the Lancashire engineering interest being consequently of a double character. These works have of late become widely noted for the manufacture of certain specialities in cranes, hoists, and lifts, diagonal, horizontal, and vertical engines, grinding and extracting machinery, and all kinds of mill gearing. Under each of these heads the work turned out exhibits a high standard of efficiency. One of the most notable items of the general output is the new "Manchester Disintegrator," for



grinding and dressing, by percussion and centrifugal force, all descriptions of material, whether animal, vegetable, or mineral. Exceptionally simple as regards construction, this machine possesses the merits of great strength and rigidity, and of being entirely automatic in its action. It can be thus effectively manipulated without the aid of skilled labour.

POWER AND HAND CRANES

are also one of the chief specialities of this firm. Our illustration shows a newly-designed cotton cord or flying rope travelling crane. The motion is taken from a flying rope by grooved pulleys, and transmitted by belts to the lifting and travelling motions. All the gearing is fixed on one end of the cross girders, which are of rolled iron or steel, secured to and carried by strong cast-iron end carriages, having double flanged cast-iron tread wheels. The lifting motion is fitted with two speeds, one for heavy weights, one for lighter weights. Instead of all lifting motion being contained in a travelling crab, its place is taken by the travelling bogie, racked to and fro by means of a chain and pitch chain wheel for the traversing motion. The hoisting gear is self-sustaining, and is of ample power and strength. The machine is well designed and accurately fitted together, and the load on the cross girders is equally distributed.

Cage lifts are also another feature. These hoists require no brake, being made on the "self-sustaining" principle, whereby on "letting-go" the hand rope, in lifting or lowering, the load remains suspended, and cannot run down. The motion of the cage is steady. The whole machine is self-contained, and is sent out of the works ready for fixing in position. There is no "jamming" or excessive friction to overcome.

Their Warehouse Friction Hoists should also be mentioned in passing. These hoists are self-contained, needing no skilled labour for fixing, and can be readily removed without interfering with the arrangement in any way. They will work equally well through hatchway or over cathead. The paper disc, or friction pinion, is formed of a number of laminae, or thin sheets of paper pressed together by bolts passing through flanges on each side of the iron central core.

It may be mentioned in conclusion that besides controlling a well-established home trade, Mr. Peacock ships largely to the foreign markets, his numerous specialities commanding a considerable sale in the Colonies, America, India, Australia, and the Cape.

THE "LANCASTER" ENGINEERING WORKS

THE chemical industries are trades in which a great many engineering accessories are used. Recognising this fact, Messrs. Lancaster and Tonge, of Pendleton, have made a specialité of providing the many minor requisites connected with the use of steam.



THE FOUNDRY.

The firm always welcome a visit from intending purchasers at their works, and taking advantage of this fact our representative called at the works and availed himself of the opportunity thus afforded for inspecting the same. From the blocks that we re-produce, a very good idea of these interesting works will be gained.

The foundry, which is specially fitted for the rapid production of brass castings, is one of the largest brass casting foundries in Lancashire. As will be seen, it is well equipped, being fitted with an overhead travelling crane which reaches every part of the foundry. The casting pit seen at the far end is 10 feet deep, thus affording ample accommodation for the production of shell or ram castings up to two tons. Being large makers of taps, valves, and boiler fittings, they cast small work in great quantities, having special brass fitting and turning departments provided with efficient tools for rapidly executing all classes of work in this connection. In cases of emergency castings can often be delivered the same day that the patterns are received. In addition the foundry is provided with a large, commodious core stove, while the requisite power is obtained from the small oblique steam engine, also made by the firm, seen at the farther end on the left. As evidence of the heavier brass casting which is done, we saw several large castings for chemical works in Widnes and district, as well as casings for piston rods and rams.

The turning shop is well equipped with lathes, drilling and planing machines. At the far end their large lathe is situated, being a 112 in. lathe for the large piston rings, the face plate of which is just visible in the distance. In addition to other lathes for special purposes, there are three 80 in. lathes seen in the centre of the shop, in which we saw piston rings in various stages of preparation, and were thus enabled to judge of the soundness of the casing castings which are made of a special alloy of iron and aluminium. The shop is well lighted both by day and by night. A special engine supplies the necessary power.

The fitting and erecting shop is a long, airy, light building, adjoining the turning shop. A travelling crane extends from end to end of the

building. As in the other shops, the power for the planing, sh and milling machines is obtained from a separate engine. The advantage of this arrangement will be referred to presently.

At the end of this shop is a special department for the testing steam traps for which the firm has such a well-earned reputation, witnessed from beginning to end the testing of a trap taken at hazard from the pile waiting to be tested, and can the statement that each trap is put to a genuine, in fact, a severe test before being sent out.

These traps are very simple in construction, based on the principle of a ball float opening and a valve on the steam pipe or coil, the valve being actuated by a quick threaded screw attached to the end of an arm. The smithy is situated at the end of this extending away to the right. The steam hammer welding shafts up to seven inches in diameter is, however, clearly visible.

The method of testing their piston rings is a secret which the firm do not make public, and we had did not press for an inspection of this department. An outline of the method they use has, however, already been given in these pages (No. 386, p. 225). They adopt a uniform scale of pressures, and we were well shown a number of diagrams of recent tests of different sized rings.

In addition to the manufacture of their special attention is given to boring out and valve facing, for a separate staff of efficient men and special boring machines are available at a moment's notice, the men being wisely employed in the shops on the construction of small engines which this firm makes. At the time of our visit several of their men and their largest boring machine heads were out. When it is remembered that attention is paid to the rapid execution of general engineering and emergency repairs the advantage of their power arrangements becomes manifest. The turning, pattern, and brass finishing shops all being provided with separate sources of power—as are likewise the planing and shaping machines—it is evident that the firm can afford to work in one department to all hours until a job has been got out of the works. Opposite the works is a commodious house which has been turned into a club and dining-room for the men and boys who



THE TURNING SHOP.

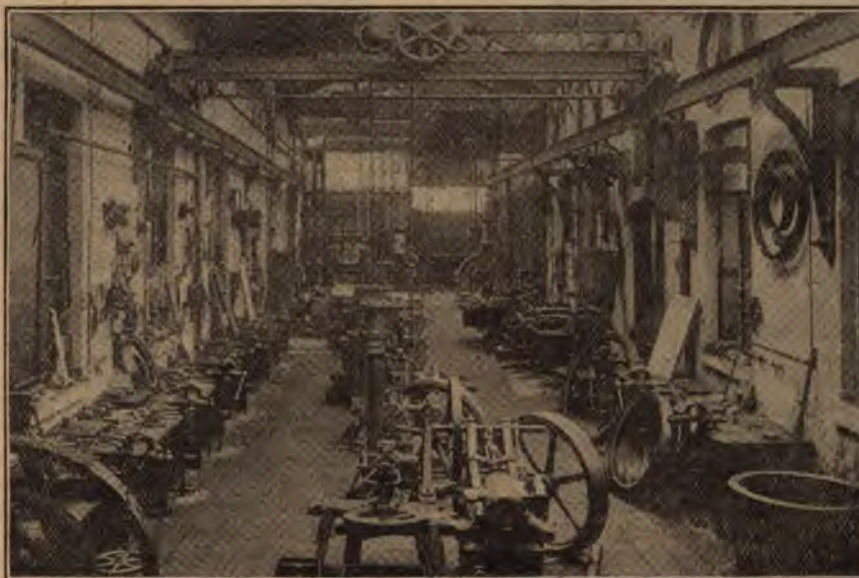
employed in the works, and there is also a small gymnasium at the end of the house.

In devoting a short space to the appliances which constitute the features that the firm produce, we shall not go into details about

steam-traps, as they are already so well known, and, moreover, they have, as previously stated, been described by us only a few months ago. Their lifting steam-traps, however, should be mentioned in passing. One of these traps is shown in section in Fig. 1. They are exactly the same in construction and action as the "Lancaster" high pressure steam-traps. With the exception that being made with a stronger box

Figure 3 shows an application of the steam-trap which is very useful, especially for steam-jackets. For cylinder drains, one trap may be connected to both ends of the cylinder if the latter be under a 20-in. diameter, and back pressure valves fixed as shewn so as to prevent passage of steam from one end of the cylinder to the other.

In figure 4 their drum governor is shown. The outer drum is made



THE FITTING SHOP.

and fast lid, they will raise the water $1\frac{1}{2}$ feet for each lb. of steam. These traps will, for instance, deliver water up from the ship's hold to the deck, but it is better with these high lifts to put a back pressure valve on. The condensed water and air pass away with the greatest ease.

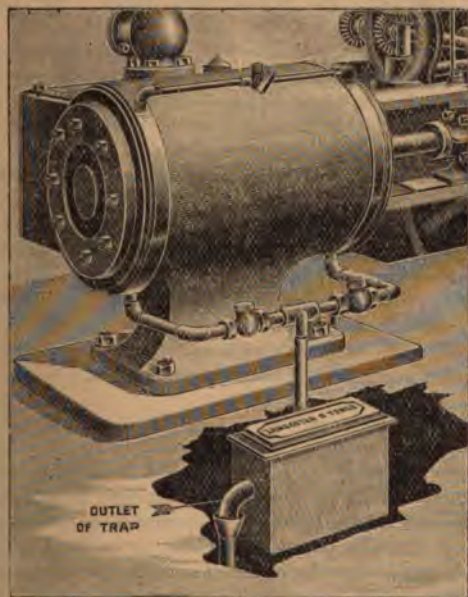


FIG. 3.

A very useful specialité for chemical works is the "Lancaster" malleable iron unions which are shown in Fig. 2. As shown in the sectional engraving, A is a special composite metal, entirely non-corrosive, which lasts a long time, cannot burn, blow, or rot out, and will withstand the action of steam, water, gas, acids, oils, ammonia, natural gas, etc. They are made with special tools, and so accurately fitted that when the nut is screwed up, an absolutely tight joint is made without any force being necessary. Their cost is little more than that of the ordinary coupling, and far less than that of flanges.

in halves to easily fix on the engine shaft without disturbing it. The two weights W, pivotted at P, are restrained from flying out by the

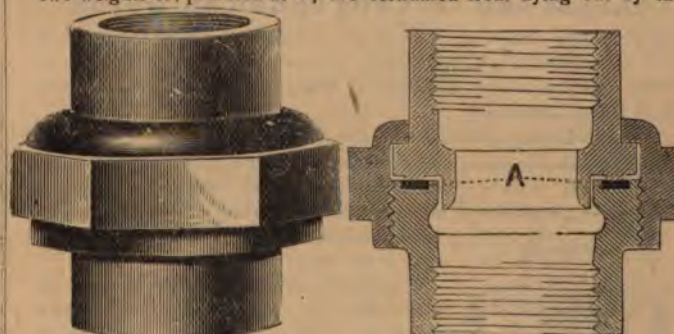


FIG. 2A.

FIG. 2B.

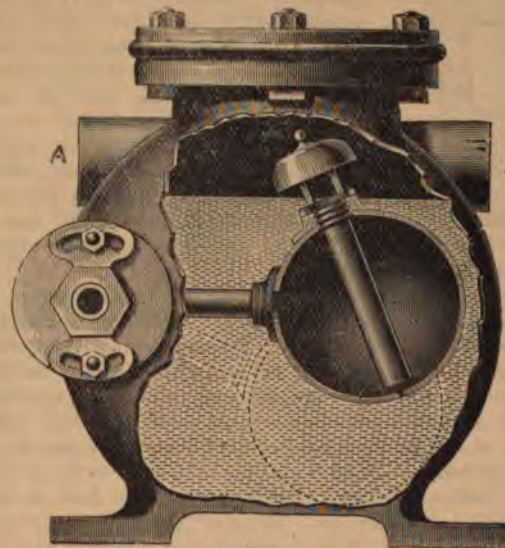


FIG. 1.

springs **S**, which are regulated by the screws **C** to alter the speed as required. In the end of the weights opposite **P** a joint is formed in which fits link **L**, acting on the eccentric **E**, thus drawing it forward on the shaft and causing it to cut off steam sooner as the speed increases.

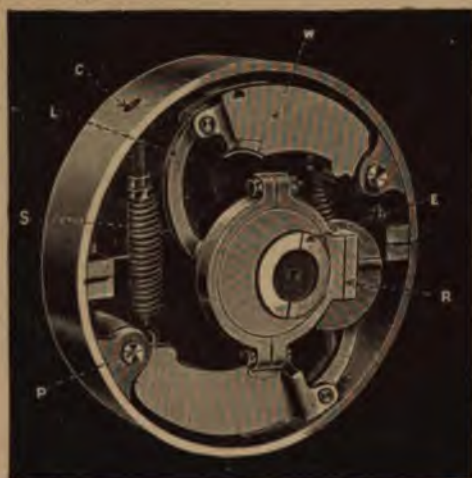


FIG. 4.

The springs **S** drawing the weights back, cause steam to be cut off later as the speed decreases.

The firm make a point of sending all goods on approval, novel approval forms printed in copying ink being appended to all their catalogues, which can be had on application.

VALVES AND TAPS FOR CHEMICAL WORKS.

A SHORT while ago we had the pleasure of visiting the works of Messrs. C. H. C. Rudd and Partners, at St. Anthony's, Newcastle-on-Tyne, where all kinds of fittings connected with chemical plant are manufactured.

The two leading specialties are the Rudd valves and Cherry's acid taps. These taps are a great advance upon the older forms which have caused so many mishaps through spurting, or have been rendered useless by the handles breaking off short at the top of the plug.



The Rudd valve (or Perfect valve) is so constructed that no liquor or grit can remain in it when the flow is shut off. The plug or spindle is perfectly non-rotative, being securely held by means of a guide clamp fitted on the spindle, and coming into contact with a ridge on the inside of bridge piece, by which arrangement also there can be no wear by turning on the packing in the gland box. All parts coming into contact with acid liquors are made in special acid, resisting regulus or other metal, which has been proved by long experience to last longer than any other used for similar purposes. The valve is operated by a wheel on the top which does not rise nor fall.

The Cherry acid tap has been devised by Mr. Thomas Cherry, who is one of the firm and a practical engineer. From the illustration given it will be seen that it is a safety acid tap, having on the shoulders of the plug a grooved out cape projecting and coming on the top of the barrel of the tap, thus effectually preventing the liquor from spurting up. Also just below the T handle a square head is formed, which could be used in the event of the T handle getting broken off so that the plug would not be disabled. A flexible washer is fitted on to the groove or neck at the bottom of the plug which keeps the latter fixed so that it cannot be pulled nor blown out. Likewise by pulling up the plug a little when turning there will be no friction, thus ensuring a long life to the tap and no possibility of accident.

Our Book Shelf.

A TREATISE ON CHEMISTRY. By Sir H. E. Roscoe and C. Schorlemmer. New edition. Revised by Sir H. E. Roscoe, and Drs. Coleman and Harden. Vol. i., 888 pp. including index. 374 illustrations and frontispiece. London: Macmillan and Company, 1894. 21/-.

This excellent work constitutes a virtual completion of the task originally begun by Roscoe and Schorlemmer. The aims then held in view have now been largely attained, and thus form a standard work of reference. Special attention has been given to the description of manufacturing processes, with a result that is on the whole successful. The article on sulphuric acid is good, though the description of the various methods of rectification is by no means complete. The account of the manufacturing processes for the preparation of bromine, oxygen, hydrochloric acid, and nitric acid are good. Chlorine is not so satisfactory.

The other portions of the book are of course all that can be desired. The historical review is interesting, and the paragraphs on critical temperature and liquifaction of gases under the heading of "General Principles of Science," show that the subjects dealt with are brought up to the latest possible date. There is also an excellent chapter on Fluorine. The latest atomic weights have been adopted.

Special mention should be made of the article on the manufacture of gas. It is well illustrated, and covers as much ground as is necessary.

Altogether this volume is just what it purports to be, namely, an up-to-date and comprehensive treatise on the chemistry of the non-metallic elements. It contains pretty well all that can be expected from such a title, and does not profess to give any extraneous information. The success thus achieved promises well for the remaining volumes, which should place within the reach of chemists a most valuable work for instruction and reference.

DIE MASCHINELLEN HILFSMITTEL DER CHEMISCHE TECHNIK. By A. Parnicke. 320 pp. including Index. 337 Illustrations. Frankfurt: H. Bechhold, 1894.

With the growth of applied chemistry, the want of a source of reference to the different machines which are now specially made to meet the requirements of chemical engineers and manufacturers is often felt.

The book is excellently illustrated, and well arranged. The principal headings include valves and general fittings, motors of all kinds, including gas, petroleum, benzine, electric, water, steam, and air motors.

Under the heading of the transportation of materials, we find conveyors of all kinds, cranes, winches, injectors and elevators actuated by air or steam, pumps, fans, air blowers and compressors.

Altogether the book fills a want of long standing. Though by no means perfect in some sections, as a whole it is undoubtedly an invaluable acquisition for works chemists and chemical engineers, as well as those engaged in general manufacturing operations.

CHEMICAL HANDICRAFT. A descriptive Catalogue of Chemical Apparatus. 3rd edition. 436 pp. including Index. About 4,000 Illustrations. London: J. J. Griffin and Sons, 1894.

This excellent and well collaborated catalogue affords great assistance to chemists in the selection of apparatus, particularly when an arrangement somewhat out of the ordinary is required. The classification given at the outset in conjunction with the Index enables any one class of apparatus to be speedily located. It is amply and carefully illustrated. There is also a list of the latest additions which have been made in the shape of new apparatus, notably in the way of balances, gas and oil furnaces, and desiccators. There are also several handy arrangements for special purposes, which will be very welcome to analysts who happen to have exceptional calls. A very useful little apparatus for a good many works, is Mohr's Still Watcher, by means of which a change in the density of a distillate is at once rendered apparent. At the end there is also a most useful appendix, devoted to different kinds of heating apparatus. The catalogue is well worth its price to all chemists, as well as lecturers and demonstrators.

THE CENTRIFUGAL TAR SEPARATOR.

In the cut below we illustrate a useful application of the centrifugal system to the separation of tar from gas liquor, &c. The extraction of the latter is so complete that less than 1% remains in the tar. Another advantage is that the tar is water free after treatment, and therefore has an enhanced value in the preparation of waterproof paper, roofing, black varnish and such like.

The tar to be separated is first heated to about 92° Fahr. to reduce its viscosity, and is then delivered into the machine by the down pipe shown to the right of the engraving. The tar being the heavier, is separated from the water, and urged against the outside of the separator, flowing upwards to the top of the rapidly rotating vessel. The water also flows up, but forms a separate layer inside the tar. Near the top of the centrifugal is fixed a plate, there being a narrow annular space between it and the outside of the centrifugal. This space is narrower than the layer of tar, and hence only tar is able to pass through this plate to the upper surface of the plate. Two fixed collecting pipes are curved over the edge of the centrifugal, as shown in our engraving; one of these pipes having its nozzle above the plate, collects purified tar, whilst the other one, having its nozzle below the plate, picks up the inner ring of water which has been separated from the tar.

The mechanical arrangements are exceedingly simple, and need not be explained in minute detail. Suffice it to say, the Separator is run at a speed of 1,800 to 2,400 revolutions per minute (according to the viscosity of the tar).

The power required is about 4 H.P.E. One attendant to see to the centrifugal, and two labourers to fill the barrels, is all the manual labour that is required. The over all dimensions of the centrifugal are 2ft. 8in. in diameter by 2ft. 9in. high.

The amount of steam required to warm the tar before passing it through the Separator is but small. The capacity of machine (ordinary load) is 2,800 gallons per day.

Good results are being obtained in many continental gas works, the sulphate made from the recovered liquor being an item of some importance.

The apparatus is the invention of Messrs. Burmeister and Wain, but all particulars as to cost, and balance sheets of actual working are to be had from Messrs. H. C. Pertersen and Company, Exhibition Buildings, Copenhagen.



IN the fashion peculiar to our heading the past year has been an eventful one, many men, honoured and of high standing in the field of chemistry, physics, or electricity, having ended noble careers, leaving the scientific world the poorer for their absence. There is some solace, however, in the fact that in most cases advanced years had been reached, thereby reconciling us to the acceptance of the inevitable. The year which was recently been left behind, has also been memorable for another though affiliated fact, in that it was the 50th anniversary of the death of the great John Dalton, as a memorial of which we have prepared, and recorded elsewhere in these columns, some particulars about his early days, and the place associated with his birth.

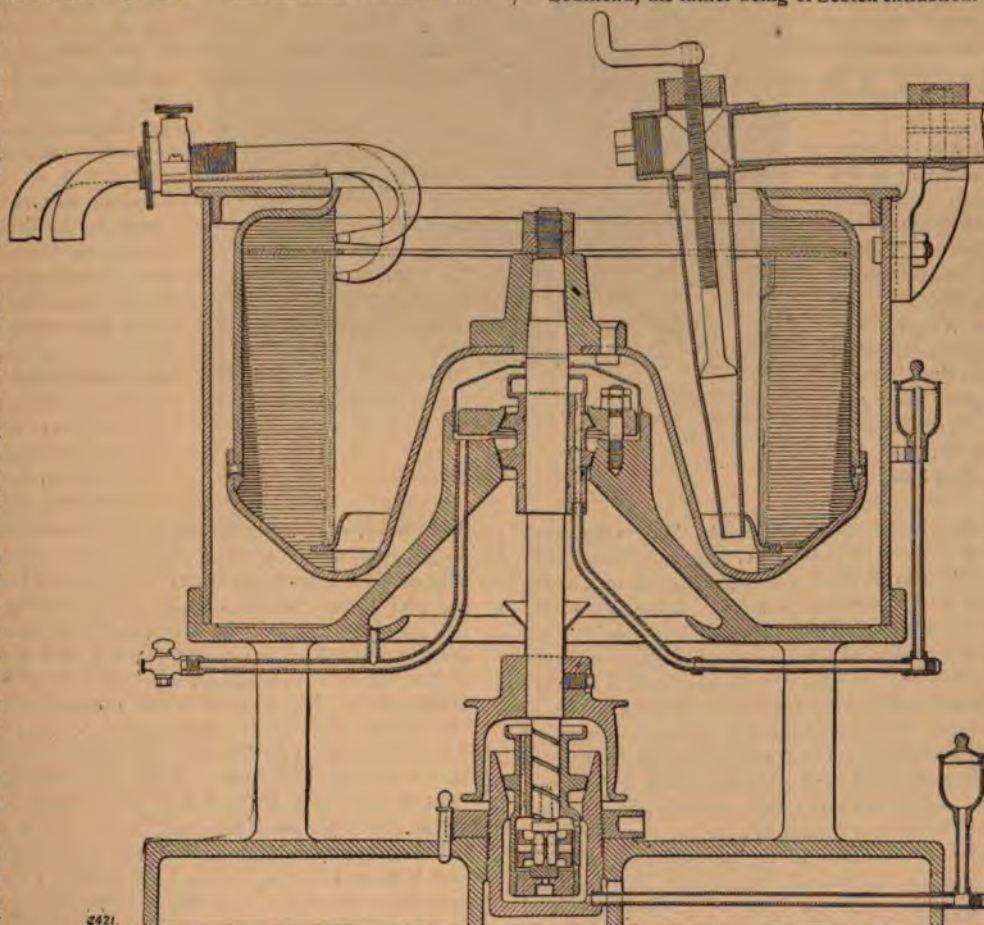
It is a strange coincidence that the eminent chemist whose career we are about to review, was born in the year that John Dalton died. We refer to the able chemist and unparalleled student,

CHARLES ROMLEY ALDER WRIGHT,
Ætæ 49,

who died somewhat prematurely in July of last year. He was born at Southend, his father being of Scotch extraction.

He received his early training in mathematics and classics from his father, his studies being adapted to his proposed calling of an engineer. He, however, developed a strong liking for chemistry, and in 1861 went straight from home to Owens College, Manchester. That he inherited his father's ability for study and acquiring knowledge there is no doubt whatever. As a student he not only was a prominent figure in the chemical laboratory and lecture theatre, but he distinguished himself equally in the physical, mathematical, and classical classes, including Greek Testament and Hebrew. In art even he was not deficient, having at all times a high appreciation of the best music. Once when at Runcorn finding in his lodgings a piano sadly

out of tune he procured a pair of pliers and with them,



In fact the most extraordinary thing about him was his remarkable versatility. As a student he always had to tell of some amusement or concert of the evening before, so that his fellow-students could never comprehend when or how he got his work for the classes—and so many of them too—so well prepared. He had a sense of humour, and loved a practical joke, though they were never of an unkind or cruel nature. His student days were full of incidents, many of which were humorous. He once had collected some six or seven gallons of iodine residues which had been precipitated with copper, as a slimy yellowish clayey looking mass. The carboy in which this mass was contained was perched on the partition dividing the working benches. In shaking it about the carboy knocked against the wall, and a hole resulted, followed by a cataract of the shiny semi-liquid over both working benches. In consequence a neatly-dressed and studious-looking young man working on the opposite side, was suddenly transformed into an indescribable, yellow, slimy looking object. Though astounded and silent for the moment, the sight of the mass of apparently animated clay, groping for water and a towel, was too much for Wright's gravity, and he made the laboratory ring with his shouts of laughter. He was, however, equally alive to the humour

of his own mishaps. Once when preparing with his usual energy and rapidity a quantity of KMnO_4 from a very caustic solution of the manganate contained in a large gallon beaker, the bottom of the latter broke, drenching his legs. He made a rush for a hydrant, under which he sat for some time. Under the action of the caustic, however, the trousers rapidly began to disintegrate, and though, taking a cab, he used, with evident amusement, to relate his comical appearance as he reached home with only a few shreds of his trousers remaining.

There is also another story—perhaps one of the most humorous—of his student days, for which along with others we are indebted to his fellow-student, Mr. Watson Smith. A rough farmer's son came to the college to learn practical chemistry, and was located next to Alder Wright. The students were allowed reagents from the store-room free, with the exception of silver nitrate, which had to be purchased individually. The farmer's son soon appreciated this fact, and being devoid of humour and the other "h," proceeded to utilize Wright's stock of AgNO_3 , after having exhausted his own supply. Wright expostulated, but to no purpose. So the next time his supply was exhausted for him he filled the bottle with distilled water, placing his own fresh supply in another bottle kept under lock and key. It is a significant fact that the farmer's boy never found any more chlorides, iodides, or bromides in any material or solution given him to exercise his analytical powers upon. He continued to use the "aqua dist" which Wright faithfully and patiently supplied whenever the stock ran low.

His first research on the "Chemical Action of Sunlight" was published in 1866. While waiting for a post after leaving college, he gave evidence of his inborn mechanical skill by constructing a chemical balance, which is still in good working order. Shortly after he was appointed chemist to the Runcorn Soap and Alkali Company, Limited, where he quickly developed into a chemical engineer and technological chemist. In 1867 he went to London, and became the assistant of Dr. Bernays at St. Thomas's Hospital. In this post he contributed a number of articles of technological value to technical papers. About 1871 he went as research chemist to Sir Lothian Bell, where his elaborate work on iron smelting formed the basis on which Sir L. Bell subsequently constructed his well-known book. Alloys received great attention

from him, and he contributed classic papers on "Ternary" to the Royal Society in 1889 and 1891, having been elected a member in 1881. He also wrote articles on "Coal Tar Distillation," and "Sulphuric Acid," and "Iron and Steel" for "Muspratt's Dictionary," "Thorpe's Dictionary," and the "Encyclopædia Britannica." Among his other important papers on technological subjects are articles and a series of Cantor lectures on Pyrites as a source of iron, and sulphur, Manufacture of toilet soaps, The chemistry of Cupro-ammonium solution and its use in the waterproofing of paper. This was also only in our last year's Special Issue that we reviewed the book, "Oils, Fats, and Waxes."

Though in some respects Dr. Wright was exteriorly rough as he was tender hearted, and never known to have done a cruel deed to man or animal. His practical compassion was at once manifested in a case of bereavement or tale of trouble came under his notice. His good deeds, however, were always done quietly if not secretly. His jokes were perfectly open, and he always rendered the rest of his nature extremely conspicuous, most people sadly misjudging him. For years he suffered from *diabetes mellitus*, and all his life endured

great pain, his disease finally proving fatal. His valuable collection of books has been presented by his widow to Dr. A. P. Luff, of St. Mary's Hospital.

HERBERT JOHN ALLISON. Æt. 65.

There will doubtless be widespread regret at the death of Mr. Allison, a well-known librarian of the Patent Office. He entered the Patent Office at the age of 24. It was at that time that the Act of 1852 came into operation, and gave a great impetus to the work. The records had previously been kept in the Rolls Court, and were in a state of confusion and out of order or classification. After he entered the library as assistant librarian, and 18 years later, on the death of the chief librarian, he succeeded to his post. He was, however, always more visible and accessible to the public than his superior when he assumed the chief position. He maintained his practice of being in the large library, ready to receive all comers. When the *Patent Journal* was commenced he was appointed its editor.

Mr. Allison had a clear conception of what the Patent Office

ought to be, considering the important interests that it serves. He bent all his best energy to raise it to the standard he set before him. For years he maintained an uphill fight against the apathy of the Treasury, and the niggardliness of the Treasury, and the success that he must be ascribed to the fact that he never knew when he was beaten.

The Act of 1885 made an immense difference to the work of the Patent Office. Not only did it cause a great increase in the number of Patentees, but by the reduced fees, it opened the doors to women and persons of small means. As these had often to dispense with the services of skilled patent agents and other kinds of expert assistance, it was most desirable that the educational facilities of the Office should be extended to assist them. Mr. Allison spared no effort in increasing the stock of the books and in providing enlarged facilities, and if he had had a free hand the expansion would have been more rapid than it was. As it is, the inventing public are indebted to him for procuring for them the best library of patent and technical literature in the country. In spite of ill-health and much suffering, stuck to his post long after he might have resigned it with credit. His dream of his last years being to complete the equipment of the



C. R. A. WRIGHT

ings now under construction, a dream which, unfortunately, he lived to see realised. He was an all too scarce a specimen of a t official; kindly, courteous, and willing almost to a fault, a trio tues seldom found in the majority of those who grace official ons.

HERMAN LUDWIG FERDINAND HELMHOLTZ.

Ætat 73.

he death of Professor von Hemholtz we have lost an able chemist hysicist. An accomplished specialist in many subjects, he suc- d in combining sciences for the attainment of results which could ve been arrived at by other means. He was born of cultivated no means wealthy parents at Potsdam, where his father was a sor at the Gynasium. His mother, Caroline Penn, was English th. As a child he was delicate, and up to the age of seven little an an invalid. In consequence he became an eager and constant . He studied in turn geometry, physics, and chemistry, while is earliest days he was a great lover of nature. After graduating D. at Berlin, he had for pecuniary reasons to serve as an army on, and during the discharge of ties he had to prosecute his s as he best could. As an ce of the difficulties he had to d with, it appears that during eer as an army surgeon he was ed to an attack of fever for the sion of his first rude and im- t microscope, his atsy in the al permitting the accumulation salary. It was while performing atine duties of this post that he ed his classic work on the servation of Energy," a short which has done more than any lentific workers can fully appre- o stimulate the researches which transformed modern science. t is not only a statement of fic fact, but a critique of all work ics. The principle so luminous- forcibly set forth by Hemholtz ade itself felt as a co-ordinating rmonising force over the entire f scientific research. That, as a of strict chronology, he was to extent anticipated by Joule and does not detract from the value essay, as he was almost ignorant f researches of either of these ists. When 27 years old he ppointed assistant in the Anatomical Museum of Berlin; n the following year he became Professor of Physiology at sberg, where he invented the ophthalmoscope. There were erable difficulties in the way of making this a workable instrument, a week he conquered the technicalities of construction. In 1856 ent to Bonn as Professor of Anatomy and Physiology, he ed in 1859 to a similar position in the University of Heidelberg, he did a large part of his physiological work. Twelve years e was made Professor of Natural Philosophy in the University of , a post which he held until his death. two great works on "Physiological Optics" and the "Sensa- f Tone" exhibit him in the character at once of physicist, physi- , and mathematician. When he turned his attention to optics owledge at the disposal of the oculist was extremely limited, at nts on the physical side, nor was its practical application to the ex- ture of the eye by any means well understood. every department of work at all closely related to his central Helmholtz has given evidence of his extraordinary fertility and us energy. His scientific papers upon a wide range of physiologi- emical, physical, mechanical, and mathematical questions are

invariably marked by the greatest breadth of view and the most direct insight into what is essential. His more recent researches upon vortices, and the mechanical conditions govern- ing the movements and distribution of the atmosphere show his intellectual vigour unimpaired by advancing years. Recognition of his eminence has been freely accorded from all quarters, but of the numerous distinctions showered upon him we need mention only the Copley Medal of the Royal Society, bestowed in 1873, and the fact that ten years later the German Emperor raised him to the ranks of the hereditary nobility. Apart from his scientific work, the life of Helmholtz was been calm and uneventful. His fertile ideas, he declared, never came of a tired brain or at the desk, but in quietude, in the freshness of the morning on awakening, or when ascending a woody hill in the sunshine. Breadth, universality of comprehension and sympathy, and a certain unmistakable intellectual serenity were his chief characteristics. His scientific memoirs will be edited by his former colleague Professor Arthur König, Departmental Superintendent at the Berlin Physiological Institute.

EDMUND FREMY.

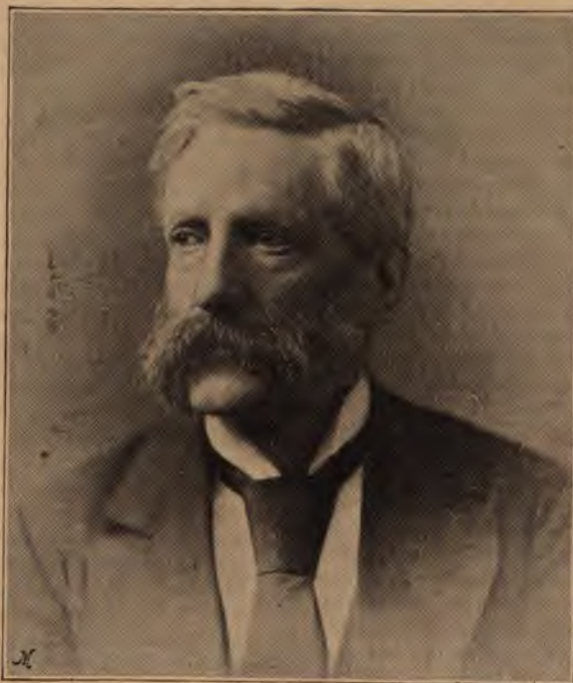
Ætat 80.

Early in the past year the scientific world lost an able advocate in this well-known *savant*. He was born at Versailles in 1814, and was instructed in the elements of chemistry by his father, a privilege which not many of our eminent men of science have enjoyed. At the early age of 17 he obtained a post at the Polytechnic School, where he continued to work and rise, till he ultimately attained to the Chair of Chemistry, which he filled with distinction and success for a number of years. He soon earned for himself a high reputation as a teacher of chemistry, and his pupils have included men who bid fair to rise to important positions in the chemical world. He had a power of infusing his pupils with a spirit of enthusiasm, as the result of which a chemical paper was started by them, composed essentially of their own work and researches.

Four years after his connection with the Polytechnic School he published his first research. Mineralogy, treated from a synthetical rather than an analytical aspect,

received much attention from him, and his work in this direction was attended with considerable success, leading from the sphere of theoretical research to that of applied chemistry. As the ultimate result of his work on the synthesis of minerals he produced rubies and sapphires identical with the natural specimens, not merely in chemical composition, but in crystalline form, hardness, colour, and lustre. He was afterwards appointed technical director of the celebrated works at St. Gobain.

His researches were not confined to the mineral kingdom, however, for he also studied the composition of ozone in conjunction with Becquerel. Of late years he distinguished himself in a somewhat dubious manner as a vigorous opponent of M. Pasteur, the zymotic theory of diseases, and microbial theory of the origin and process of fermentation. He contributed largely to the leading French journals of science, his memoirs being numerous and valuable. About thirteen years ago he turned his attention to literature, and undertook the superintendence of the compilation and publication of an encyclopedia of chemistry, which was almost completed at the time of his death, and was being looked forward to as likely to be a work of great ability.



A. H. HASSALL

PAUL JABLOCHKOFF.

Ætat 47.

The fame of Jablochhoff as an electrician was established by the invention of the well-known electric candle, which bears his name. Though a native of Russia, the majority of his work was accomplished and most of his time spent in France. Still to his native country he owed almost all his early training.

He was born at Serdobsck (Government of Saratow) in September, 1847. He studied at the Military Engineering College at St. Petersburg, which he left in 1866 when 21 years of age. In 1871 he was appointed director-general of the Moscow-Toursk telegraph lines. It was while he occupied this post and had the telegraph works at his disposal, that Jablochhoff began to take a deep interest in the subject of electric lighting. In 1875 he quitted the Imperial Telegraph Service, and since that time devoted himself exclusively to scientific pursuits. In 1876 he went to Paris. At this time there was being held in London an Exhibition of Scientific Apparatus, and M. Bréguet sent Jablochhoff to London to represent that well-known firm. On his return to Paris, the Bréguet workshops were placed at his disposal. Eight months of experimental work resulted in the Jablochhoff candle. This discovery gave a great impetus to electric lighting. A company was formed to work the patent, and in May, 1878, a row of Jablochhoff candles lit up the Avenue de l'Opéra at Paris. The Jablochhoff system of lighting soon spread, and before long electric candles were burning at Rome and on the Thames Embankment at London. The electric candle, however, is by no means Jablochhoff's only invention, as the following list of patents taken out by him will show:—The Electric Candle; The Distribution of Currents by Means of Induction Coils; An Incandescent Kaolin Lamp; The Distribution and Division of the Electric Current by Means of Condensers; A Voltaic Battery Consuming Coal; An Alternate Current Dynamo; A Sodium Battery; Auto-accumulators. The second of these patents, as is well known, has been held to be the master patent for transformer distribution, and the system patented in the fourth was at work at the Paris Exhibition in 1878. He died near his native place at Saratoff.

JOHN PARSONS COOKE.

Ætat 47.

In Professor J. P. Cooke America has lost one of their most distinguished academic chemists and mineralogists, as well as an able and ardent practical chemist. His work on "The New Chemistry" has been translated into nearly every European language. Born in 1827, he graduated from Harvard in 1848. In the following year he became tutor in mathematics, afterwards instructor of chemistry, and in 1850 Erving Professor of Chemistry and Mineralogy at Harvard University. In addition to his duties at Harvard, it was his practice to give courses of popular lectures on chemistry in the cities of Baltimore, Brooklyn, Washington, Lowell, and Worcester, besides his regular lectures at the Lowell Institute in Boston. As director of the chemical laboratory at Harvard he has published numerous contributions to chemical science, most of which have been collected in his "Chemical and Physical Researches." In 1872 he was elected an honorary Fellow of the Chemical Society, sharing that distinction with only one other American; and in 1882 he was granted the degree of LL.D. by the Cambridge University.

CHARLES O'NEILL.

Ætat 68.

In November of last year a chemist of some repute, and an authority on calico printing, was lost in Mr. Charles O'Neill, a native of Manchester. His profession was that of an analytical chemist, and for some years he conducted chemical technological classes at the Technical School. He was widely known by his works on calico printing and colouring, viz., his "Chemistry of Calico Printing, Bleaching, and Dyeing," 1880; "Dictionary of Calico Printing and Dyeing," 1862; "The Practice and Principles of Calico Printing," &c., 1878, 2 vols. He was also editor of the "Textile Colourist," published in 1876-7, and was a voluminous contributor to the press. From 1876 to 1891 he sat as a member of the Manchester School Board, and gained the esteem of his colleagues for his clear counsel and fair-mindedness. He was a member of the City Council from November, 1875, to November, 1891. He died at Sale, near Manchester.

LORD SWANSEA.

Ætat 74.

Lord Swansea, formerly Sir Hussey Vivian, died quite suddenly November last. He was a descendant of the titled house of Vivian, which he enormously enlarged. He introduced the extraction of and gold from copper, and began the production of nickel and at the time a new manufacture in South Wales, and, with one exception, in England. To this he afterwards added the manufacture of bismuth, and conducted large copper smelting and colliery industries.

He was immensely popular in the district and at his works, a monument having been erected to him only a few years since in Swansea.

ARTHUR HILL HASSALL.

Ætat 77.

The late Dr. A. H. Hassall, though not such a prominent figure in the analytical world during the past few years, was one of the pioneers of sanitary science of to-day. In 1851 he obtained his degree at the London University.

It is undoubtedly due to his ardent work in connection with sanitary reform that we have to-day such an elaborate method of superintending public health from a scientific point of view, and such widespread interest for the detection of food adulteration.

It was due to the movement he made in 1850 to devise methods for the detection of food adulteration that the matter was first taken up by the *Lancet*. As the result of his further researches, such an alarm state of affairs was revealed that a Select Parliamentary Committee was formed in 1855, the outcome of the labours of which being the Food Adulteration Act of 1860. By reason of his extensive analytical researches in connection with the analysis of foods, he may undoubtedly be termed the father of public analysis; and according to the *Medical Press* by his prominence in the anti-adulteration cause which was begun in the fifties, and is being actively carried on at the present time, he earned for himself the honourable sobriquet "The Apostle of Anti-Adulteration."

In 1873 he was appointed Public Analyst for the Isle of Wight and was also the first Vice-President of the Society of Public Analysts. Among the numerous papers and books which he wrote, he brought out in 1876, "Food, its Adulterations, and the Methods for their Detection." This work contained the results of most of his chemical and microscopical researches in connection with the detection of adulteration in food, and comprised also an account of many of the newer methods of analysis. As a man he was a refined gentleman, with a prepossessing and courteous bearing. By personal preference, always first and foremost a physician, it will be seen from even the above brief review how important work he did as a chemist. We are indebted to Mr. G. Clayton for most of our particulars and the speaking likenesses reproduced.

JOHN GALLOWAY.

Ætat 90.

The late head of the well-known firm of Galloways, Limited, a leading light in the engineering trade, and was fittingly known as the "father" of the Manchester iron trade. His father, William Galloway, the actual founder of the original firm, came to Manchester in 1790, from the North of the Tweed. Soon after he was followed by a fellow Scotch worker named James Bowman. The letter in which Bowman invited Bowman to join him in partnership is still in existence. It accurately was the forecast of the founder of the business may be seen from the following extract from the said letter:—"I think your energy here would be for the advantage of both of us, and I have no doubt by perseverance we can make the business answer our utmost expectations. We have much to hope for, and little to fear, in such a trade centre as Manchester. With a populous neighbourhood the utility of steam engines is every day becoming more evident, and they are more and more called for, and consequently millwork in all its parts,

is an advantageous prospect. I have by several years' experience the opportunity of making myself fully acquainted with everything mentioned here." From the letter it seems that £200 was all that was required. In 1820 John Glasgow, another Scotchman, joined having been formerly manager for Rothwell and Hlick, of

Mr John Galloway was born in Lombard-street, on the east end of the city. "To mention Lombard-street now," he once remarked, "is to raise a smile, for it is in a very disreputable quarter. However, it was quite in the country, surrounded by smiling fields instead of gin palaces." He was educated at a school, well known at those days, in Back Mosley-street, conducted by Messrs. Galloway and Albiston, and connected with the well-known Mosley Independent Chapel. On his 14th birthday he was apprenticed to his father's firm of "Galloway and Bowman."

Galloway remained in his father's firm until 1835, when, with his brother, William, he established the Knot Mill Ironworks, under the title of "W. and J. Galloway," putting up in the first instance an iron foundry and a small shop for doing simple engineering. In 1839 the firm was converted into a limited liability company, being registered as "Galloways, Limited," with Mr. Galloway as chairman, and Mr. John Galloway, jun., as vice-chairman. In 1849 they made their first "Galloway" boiler for Messrs. Galloway and Co., of Salford. It was not, however, until 1851 that the work was quite completed, and it was first put to work at the International Exhibition in Hyde Park. The success of the boiler was great and immediate, and from the time of its construction Mr. Galloway and his family devoted all their energies to its development and to boiler making in general.

In 1860 they made the flue of an oval shape, with the same diameter of tubes. In 1875 another important advance was made in the construction of what is known as the "Galloway flue." Even then the business of the firm became so great that they were obliged to work at Ardwick to cope with the increasing demand, and they employed the works at Knot Mill solely for engine construction. The Ardwick Works cover eight acres, and find employment for upwards of 800 men, who, supplemented by the numerous and various machines used, turn out fully one large boiler a day. In fact, during the last year 384 boilers were delivered, weighing in the aggregate 30 tons.

There are, however, several other interesting incidents in the late Mr. Galloway's career. There is every reason to believe that the first iron boiler ever made was constructed at Southport by Mr. Galloway. The piles were sunk in the sand by forcing water down the pile.

One of the most important episodes in Mr. Galloway's career, and one which he always took a deep interest in, was his long intimacy and connection with Mr. (now Sir Henry) Bessemer, the inventor of Bessemer's process. Mr. Galloway's first acquaintance with Mr. Bessemer was in 1843, when the latter introduced improvements into the method of making sugar, and requested Mr. Galloway to construct machinery for the manufacture on the improved system in London. After this connection was carried out other important work was executed by the firm, much to the satisfaction of Mr. Bessemer that when he first conceived the idea of making steel direct from cast iron by blowing air through the molten metal he applied to Messrs. Galloway to assist him in carrying out the invention by constructing and testing the apparatus. A piece of land adjoining the Knot Mill Ironworks was obtained, and a long series of experiments, occupying twelve months or more, proved the practical value of the process. Success eventually crowned the efforts; but, in spite of the proof that the scheme was quite practicable, no steelmaker could be found to make a commercial trial of the process, nobody feeling sufficient confidence in the result to warrant carrying down the requisite plant. At this juncture in the history of the most important inventions of modern times the late Mr. Galloway and his brother William came to the rescue, the result being a partnership under the title of "Henry Bessemer and Co.," and the carrying down of works at Sheffield, where a small but complete plant was put down, with extremely satisfactory results. These works, which were running, were the forerunners of similar but much more extensive works all over the world.

Paper-Makers' Column.

THE MANUFACTURE OF WOOD PULP.

[SPECIALLY CONTRIBUTED.]

THE wood in the first place is cut into pieces about a yard in length with an ordinary circular saw, peeled with a barking machine, split with the splitting machine if required, and then cut into chips about an inch long with a slicing or chopping machine. This latter machine is very strongly built and contains two steel knives, one foot four inches broad. It is a great advantage to have the knives fixed in this machine, so as to form an angle of 8-10 degrees with the cutting face. The slice of wood is more cleanly or more evenly cut from the log by having the knives fixed in this position, and the end pieces of the log, which are difficult to break up and to boil in Ritter-Kellner boilers, are completely done away with. The machine, moreover, works more easily, and the slices are obtained in a more broken state.

The chopped wood, according to the special arrangements, now falls upon a travelling belt, and is conveyed to a crushing machine, sometimes called a disintegrator. This machine consists of a strong iron disc, provided with a number of strong iron bars arranged in concentric circles, and revolving at a high speed in a perpendicular plane. The number of revolutions it makes is 800-900 per minute. In revolving these bars or pegs pass tolerably close to a series of other bars, arranged systematically in another disc, which is stationary. The machine is covered with a casing of sheet metal, which has two openings—one for the introduction of the slices of wood, and the other for allowing the chips, the breadth of which does not exceed 0.3 to 0.4 inch, to pass away. This size is for the good wood; the knots, however, together with the clean good wood clinging to them, remain unbroken. It is consequently possible to give the crushed chips a mechanical sorting, which is carried out by the sorting drum or duster.

This machine consists of a horizontal conical drum, one metre long, and in virtue of its spherical form, the chips, which are delivered into the narrow end, travel slowly to the wider end. The covering of the greater part over which the chips pass consists of a wire netting, having meshes 0.15 inch wide. The lower and shorter part is formed of horizontally-arranged lattice work, made of strong square iron half-inch rods, and placed about three-quarters of an inch from each other.

The wire gauze removes all dust, sawdust, and small particles of bark. The chips prepared for boiling and freed from the small impurities fall through the lattice work and are directly conveyed to the store over the boilers, or may be still further sorted by hand; whilst knots and large pieces of uncrushed wood, as well as coarse impurities, fall out at the open end of the drum.

For producing the better grade pulp, the chips where ever possible fall direct through the lattice work of the sorting-drum upon an endless belt of canvas cloth, along both sides of which women stand, who pick out the knots as they pass.

The removal of the knots, which is considered a most important and most difficult problem, is thus accomplished in a fairly cheap and tolerably efficient way. The knots can never be completely removed by boring, as was formerly done, because the borer cannot be made to exactly follow the knot. Neither can they be removed by hacking them out with an axe, nor cut out with small circular saws, as both methods give rise to a great loss of good wood. If the knots are to be completely removed by hand labour a large number of women must be employed, which greatly raises the cost of labour, and even then it is impossible to reach the highest purity.

THE PREPARATION OF THE LIQUOR.

Since Dr. Frank published his researches on this manufacture (and his conclusions have been fully borne out in practice) every manufacturer knows that the acid liquor should contain much free acid and proportionately less lime. This end is easily or with difficulty obtained according to the kind of liquor apparatus used.

The Mitscherlich-towers in this matter offer proportionately the greatest difficulties. It is not easy to select the limestone so as to get good lye. Hard limestone or dolomite yields a solution richer in free

acid, but it allows much unabsorbed gas to escape. Soft limestone absorbs, on the other hand, all the sulphurous acid, permitting nothing to escape. The liquor prepared from it contains, however, so much lime that a separation of monosulphite unavoidably takes place in the boiling. To obtain the most favourable result, it is possible to calculate the necessary quantity of stone and dispose it so as to yield a favourable result, but in the course of time the less soluble material would collect in the bottom part of the tower and thereby change the composition of the liquor.

When using towers there is scarcely any other way left, than to divide them into divisions which must be filled with different materials. In the lower part place inactive materials such as wood, coke, etc.; in the middle part less soluble calcareous stone, such as dolomite or hard limestone; and in the top part, place easily soluble soft limestone or chalk.

Such an arrangement requires a good deal of overlooking because the grids get stopped up. It is, therefore, better to use two towers instead of one, filled completely with the stone. A natural draught is not sufficient to draw the gas through two towers, and the necessary intermediate pipes, and consequently an artificial one must be used. This arrangement constitutes the Ritter-Kellner-Inselle tower.

The trouble of raising the stone to the top of the tower, the frequent stoppages for filling, etc., and the great height of the towers themselves takes away many of their advantages, and hence the "limestone boxes" have been introduced which are now used in numerous factories. Six or eight boxes whose total height exceeds that of one Mitscherlich tower, are arranged so that the sulphurous acid can be passed through each of them with artificially produced suction or pressure, while they are joined with one another in series. One box is usually out of work for clearing or repairs.

This advantageous and easily managed liquor apparatus formerly proved costly because of the number of pumps, pipes and reservoirs which it required. In the first arrangement each vat was provided with one special top and bottom receiver and pump. Experience, however, soon showed that this was unnecessary, and that two pumps and two receivers, two above and two below, completely answered the purpose of the whole series.

The work is carried out as follows: water is conducted into the top reservoir which feeds the three highest and the last boxes, the fluid passing through these takes up the last traces of sulphurous acid, and flows into the so-called "half-liquor receiver." From this the half-diluted liquor is pumped into the two top reservoirs and divided among the three or four bottom or first boxes, and then flows into the receiver as prepared liquor. By merely regulating the taps we obtain in this way a good portion of the sulphurous acid gas and a liquor of the desired strength.

In all cases where the liquor is produced from pyrites and limestone, a scale of gypsum appears in the towers or vats, causing more or less trouble. This can be entirely avoided by a simple arrangement which, nevertheless, is not always employed. This arrangement consists of a washing vat, containing a little water and two lead pipes, one of which dips into the liquid and conducts the gases into it, whilst the other, being connected with a steam ventilator, draws the gases away and leads them into a cooling apparatus, and thence into the towers. All the hot and sulphuric acid vapour which comes away with the gases are retained by the water. The water is very soon rendered impure, and must be replaced every hour. The height of the water in the apparatus must also be constantly watched and kept at the same level, because it is quickly evaporated. The amount of steam required for the steam ventilator is considerable, but the advantage of keeping the towers free from gypsum, thus affording uninterrupted work, more than compensates for it.

It is much easier to prepare the lye of the desired composition by using raw sulphur instead of pyrites, and passing the gases through milk of lime. By this method it is possible to work with weighed quantities without loss, and although the unit weight of sulphur is denser in raw sulphur than in pyrites, most new factories prefer to use raw sulphur. Many old works will not or cannot rebuild their present costly arrangement for liquor-making, and to improve the liquor in such works, sulphurous acid may be bought.

THE BOILING.

The crust for protecting the boiler shell against the action of the sulphurous acid gas is one of the most important parts of the cellulose manufacture. The original covering of the boiler (*C. T. J.* 296, p. 42) has proved to be good. It is careful repainting in the joints where the cement has been broken by the acid. The plain lead lining of the Ritter-Kellner is deteriorated because it cracks by the repeated expansion and contraction. Small and scarcely visible cracks or flaws are made, allow the hot liquor or gas to pass through to the boiler, impossibility of covering or stiffening up all these cracks is why this system is being given up. Most boilers at the present time are lined with brick work. In addition to the many well-known methods still remaining, the system invented by Wm. S. Hunt found a general application, especially in Austria (*C. T. J.* 318).

According to the latest fashion of applying this method, of iron wire, 0.4 inch thick is placed against the boiler and forms a network of square meshes. The "Wernel" tiles are then curved to the curvature of the boiler, are then heated upon this, in the special mortar, the composition of which has already been given in the *Journal*. The mortar hardens in about an hour, a boiler is prepared for work the first boiling is proceeded with this is finished it will be found that each joint is cracked stones remain unaffected. The fractures are now opened with a special tool and filled in with a special mortar. The boiler is again used, and after the second boiling, fewer cracks are found. This process is repeated during the first 20 or 25 times the wall is sufficiently thick. After this, glazed earthenware withstands the action of the acid tolerably well, and the roughened surface with the same mortar. Any cracks seen afterwards must be carefully repaired. It is obvious, that this lining is tedious and expensive. As it promises however to and to effectually protect the boiler shell, rendering lead and it is largely used. The Wernel lining can be introduced in old boilers, whilst the general application of the Salomon method (*C. T. J.* 343, p. 47) is limited, because it cannot be introduced in single shell boilers.

It is filled entirely full with wood chips, and then run in till all air is expelled, if the boiling is carried indirect steam; but if conducted with direct steam, space for the dilution of the liquor within the boiler during the process. In the Mitscherlich process it is advantageous to use wood before running in the acid liquor.

The boiling consists in raising the temperature and pressure necessary limits have been reached, and in maintaining the heat so that the liquor has been exhausted. The pressure is limited by the strength of the boiler shell, and it should not be allowed to rise above 140° C. The acid, etc., blown off from the boiler, is cooled and used for improving the liquor. It is advantageous to place the so-called recovery gases in the receiver containing acid, in order to absorb the heat which otherwise would be lost. The liquor is heated in this way to about 50° C., and the heat consequently requires less steam and time than it otherwise would. The blow-off gases which are not condensed conveniently recovered by passing them into the towers.

By the use of high pressures and temperatures quick boiling is obtained, but the heating must be stopped before the liquor is because the heat stored up in the earthenware lining would the rest of the free sulphurous acid. In the latter case, i.e., brown, tender, very soft pulp is obtained, which is distinguished by its bleachability and by a decrease in the viscosity.

Another much feared impurity in the cellulose is the so-called "beetles" as they are familiarly designated in the trade. They are formed by the action of hot steam upon the dry wood which has not been saturated with liquor; or when the wood is placed in contact with over-heated pipes. Wood thus heated and brittle during the boiling, and assumes a yellow colour. The absence of such pieces is essential in pulp of

The presence of thin chips can be avoided with tolerable certainty observing the following points, viz.: 1. The heating tubes cold before beginning the boiling. 2. Enough liquor must be admitted to the boiler. 3. The steaming must be carefully carried on, especially in the Mitscherlich process.

THE WASHING PROCESS.

Mitscherlich "stampers" perform their work well, but must give way to the Hollanders. Kollergangs can also be used as the knots in the stuff being previously separated by hand, but the lying between the fibres, is pressed into their pores, so that the washing in the Hollander is incomplete, and the pulp be brought up to a pure white colour. The heavy Hollander pumps the stuff in circulation only without grinding it. Stuff chests and pumps receive the pulp for further treatment.

A simple way of doing this work consists in using the "separator," a very extremely simple machine essentially consists of two long vertical cylinders at the ends, with a strong wooden frame quickly revolving. There are on this shaft a number of arms arranged in the form of a spiral, which carry early to the bottom of the vessel. The retained pulp passes beneath the arms or from the bottom of the vat, is fed into the smaller separator, the first separator and is carried to the wider separator where the beating takes place. The second cylinder is a disintegrator. As it rotates this vessel gently dilutes the water. The

vessel completes the disintegration, and as the stuff flows from it, the hard bundles of fibres remain unbroken, while the good fibres are roughly mixed with the water. The shaft in the first of the "separators" should revolve 300 times a minute because it does the most work; the other should revolve 125 times a minute. The largely diluted pulp is now put over the sand traps and knotters, and over the press pâte.

CUMMER AUTOMATIC DRYING MACHINES.

In our issue of 3rd November last we gave a brief description of the Cummer machines, which, after having attained an enviable position throughout America for economy, efficiency, and durability, have been successfully introduced into Europe, as well as Africa and Asia.

These machines are used for drying materials of all descriptions, and that the largest firms of chemical manufacturers in this country adopting them, shows very clearly that their advantages over the machines hitherto used are very marked. Our readers will no doubt be interested in the illustration herewith, which shows the construction employed. We have not space to show the modifications required for treating different materials, but our illustration represents one of the most widely used of the seven styles of machines made under the Cummer patents.

The material is fed into the revolving cylinder, and, passing through it, is fed out of the machine automatically by mechanical contrivances, varying according to the heat to which the material is subjected. The furnace is shown at the front end of the machine, and mechanical draught is employed, resulting in a complete combustion of the fuel, as which hard or soft coal, coke, wood, or oil can be used. The heat thus generated passes into and through the revolving cylinder, being generally brought into direct contact with the material, though this depends on the material treated.

So thorough is the utilisation of the heat that in many cases the Cummer machines have been proved to do four times the work accomplished by other methods with the same amount of fuel.

The machine as shown has to be enclosed in a strong brickwork setting, and requires very little power to operate it. Messrs. Erith, we learn, recently sold one of these machines to dry 500 tons of material per day, this being the largest capacity of any drying machine yet made.

The modified form of machine used for drying and calcining soda-ash, china clay, &c., at very high temperatures, is much in demand.

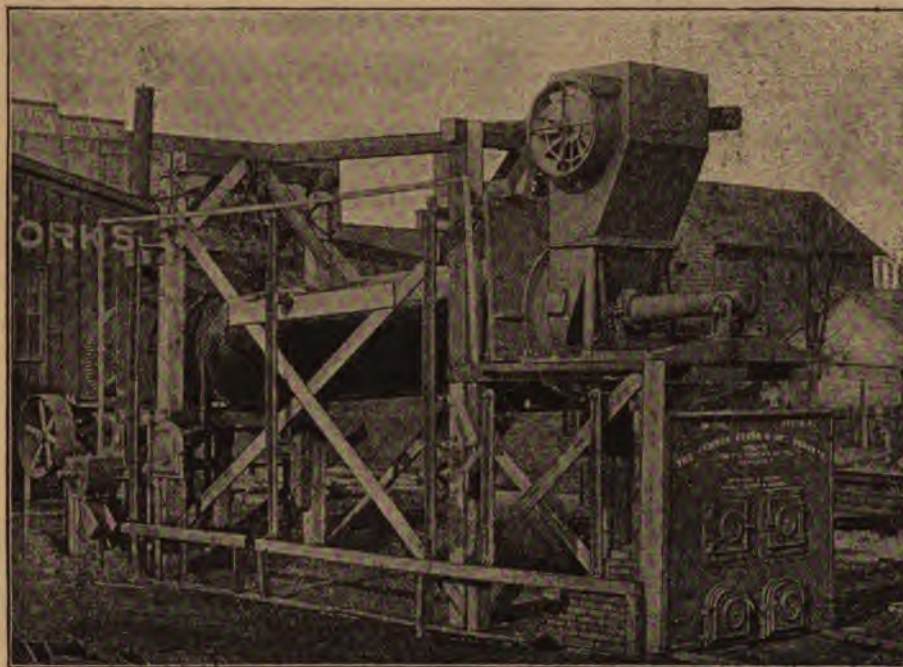
Temperatures up to 2,000 degrees Fahrenheit can be employed without affecting the durability of the machines, and this can be verified by reference to actual users.

Another modification is used for drying at low temperatures, being specially suitable for soda crystals, sesqui-carbonate of soda, &c. Superphosphates can also be readily dried in a specially designed machine.

All kinds of clay, sand, salt, ochres, umbers, and whiting can be dried by these machines without risk of injuring their shades of colour; while cement can be dried at a fraction of the usual cost, in addition to the saving of much labour. As an instance, a large cement works is at present evaporating in daily practice over 20lb. of moisture from cement slurry per lb. of fuel used, a result that speaks for itself. Bricks can also be advantageously dried on Cummer's hot-air system; in fact, the methods used have already been applied to almost every class of material that is produced in large quantities.

These useful dryers have been introduced into England by Messrs. Charles Erith and Co. Their head office is at 70, Gracechurch-street, London, and they will be glad to reply to inquiries, and to submit estimates for the application of these machines to any purpose.

MARBLE GLASS.—The following mixes are said to give a very fair imitation of marble:—*Black*: Granite 100 parts, limestone 28, soda 40, potash 20, black oxide of manganese 30. *White*: Syenite 60 parts, coarse sand 80, white sand 30, feldspar 30, fluor spar 30, potash 20, soda 25. The proportions can vary more or less according to the shade desired and the consistency needed in working. To produce coloured effects the following additions to above are recommended:—*Red*: Black oxide of manganese 30 parts, oxide of iron 4, brick dust 3. *Violet*: Black oxide of manganese 20 parts, oxide of iron 3.



Oils, Paints, and Soap.

THE LEAD INDUSTRIES OF THE TYNE.

The River Tyne is by general consent considered the head-quarters of the lead industry in England, but it is now more a manufacturing than a smelting centre, very little of the latter work being at present carried on. The lead is imported in the form of bars containing, in the case of silver leads, from 40 to 300 ounces to the ton. There is also a considerable quantity of soft lead imported, containing very little silver, used in the manufacture of white lead, etc. The work of the manufacturers is to extract the silver and prepare the lead for manufacturing purposes; the articles made being sheet lead, lead pipe, white, red, and orange leads, litharge, and shot.



SEPARATING HOUSE.

Showing Pots for Working Pattinsonian Process.

Previous to the invention of Hugh Lee Pattinson in 1833, the only process used for the extraction of silver was cupellation, by which lead containing less than 8 ounces of silver to the ton could not be profitably treated; but by the Pattinson process (which in 1838 was communicated to the British Association at the first meeting ever held in New castle) it became possible to extract 2 or 3 ozs. of silver at a profit.

There have been several attempts made to desilverize by other methods since the Pattinson process was introduced; but at the present time there are only two known to be worked in England, viz., the Luce-Rosan or steam process, and the Parkes or zinc process; the two, in some cases, being worked in combination. There are five firms of manufacturers on the Tyne who refine lead: Messrs. Cookson and Co., Foster, Blackett, and Wilson, Ltd., James and Co., Ltd., Locke, Blackett, and Co., Ltd., and Walkers, Parker, and Co., Ltd. The following is a brief description of the three processes these firms adopt for lead refining.

THE PATTINSON PROCESS.

This process is founded on the fact that when lead containing silver is melted and cooled down until it begins to set, being kept stirred meanwhile, crystals form, which on being removed will be found to contain much less silver than the original lead, while the remaining liquid lead drained from these crystals is much richer.

THE LUCE-ROSAN PROCESS.

This is sometimes called "Pattinsonizing by steam." The lead to be treated is placed in a large pot, melted down, and a jet of superheated steam forced through it from an inlet at the bottom; this has the effect of oxidising some of the impurities, which rise to the surface as dross, but has little effect upon the silver. The lead is then cooled

down, and the liquid lead run off by a spout from the bottom of the pot, leaving the crystals behind, and thus reversing the original Pattinsonian method. It is contended by those who work Pattinson's original method that lead of a purer quality can be produced by this process than by the steam process.

THE PARKES OR ZINC PROCESS.

This process was discovered by Alexander Parkes, of Birmingham, and patented by him in 1850, being founded on the fact that if 1 to 2% of zinc is mixed with molten lead containing silver, it forms an alloy with the silver which will float in the form of a crust on the surface of the lead as it cools and may thus be removed. This process is now worked at many of the large desilverising works both at home and abroad, being for very rich leads quicker and more economical than the Pattinson process.

The lead containing silver to be treated is placed in a large pot heated, from 1% to 2% of zinc being added, the quantity varying according to the silver contents of the lead. After the whole is thoroughly mixed, the fire is drawn and the lead cooled down. A crust soon begins to appear, which, after being pushed back under the molten lead for some time, is at length allowed to form on the surface and removed. The lead is then again melted down, and more zinc added, until the whole of the silver is removed.

Treatment of Zinc Crusts.—These are placed in a small reverberatory furnace, the bottom of which has a fall towards the tap hole (or a shallow pot with a slightly convex bottom). The heat is regulated so that it is kept above the melting point of lead, but under that of zinc. The free lead is here thoroughly drained from the zinc crust. As the lead which is thus drained away contains a certain quantity of silver, it is added to the next parcel of lead treated.

Distillation of Crusts.—The crusts containing a large percentage of the whole of the silver, are now broken up and placed in a retort which is heated beyond the boiling point of zinc. This means the zinc is volatilised, and subsequently condensed, being recovered in the form of metallic zinc. At the close of the operation about 75 per cent. of the weight of the crust treated will be found in the retort in the form of lead very rich in silver, but contain-



RED LEAD FURNACES.

a small percentage of zinc. The silver is finally separated from the lead by the old process of cupellation.

Messrs. Foster, Blackett, and Wilson, Limited, of the Tyne Works, make a speciality of chemical sheet lead refined by the Pattinson process, they being the only firm in England so far as is known, who confine themselves to that process. Moreover, as evidence given before the Select Committee which was sitting recently clearly shows that their white lead holds a very high position in the trade, we have taken their works as a type, and in the following

a description of the different processes as carried on by them at works.

DESILVERISING THE LEAD.

Pattinson plant at these works consists of three sets of pots—s in a set—each pot being of 12 tons capacity. The general position of the pots will be seen from the accompanying view. A set is placed in a row with a furnace to each pot. The lead to be desilverised is placed in a certain pot in the series according to its contents, melted, then cooled down, being continually stirred about two-thirds of the lead is formed into crystals and the remainder is in a liquid state. The crystals are gradually removed with a rated ladle and placed in the next pot to the right of the workman. The liquid lead drains back into the first pot, from which it is into the next pot on the left of the workman. This process is repeated all through the series, and by the time the lead reaches



SHEET ROLLING MILL.

at on the extreme right it has been refined to such a degree that only a fractional percentage of impurity remains.

The crystals are melted down in the last pot, called the "set pot," and either run into pigs for manufacturing purposes, or direct to the sheet mill. The liquid lead which gradually finds its way to the pot at the left-hand end of the series, is cast into pigs, containing over 500 ozs. of silver to the ton. The silver is extracted from this enriched lead by the usual process of cupellation.

It will be seen from the foregoing description that the process is a mechanical one, the object being to remove the silver and all impurities from the lead, and leave it almost chemically pure. In comparison with the Parkes process, in which the lead is saturated with zinc to remove the silver, the superiority of the Pattinson process is evident. The lead is intended for acid chambers and other chemical purposes. It will be at once apparent to all who know how readily lead corrodes by the slightest percentage of zinc is attacked by sulphuric and nitric acids. This is further shown by the fact that chemical manufacturers are fully aware of the advantages of Pattinsonian lead, and use it regularly.

ROLLING SHEET LEAD.

The process of lead rolling is very simple, although the plant is large and costly. The lead is cast in a mould into a block weighing 8 tons. This block when set is lifted by a crane on to the mill and passed through a pair of steel rolls 8 ft. long until it is reduced to the uniform thickness of one inch. It is then cut off according to the weight of the sheet required, the calculation being upon the fact that sheet lead one inch thick weighs 64 lbs. per square foot. The piece cut off is passed between the rolls until it is reduced to the desired poundage. The edges are then cut clean and the sheet rolled up ready for the market.

MANUFACTURE OF LEAD PIPES.

The only method in use is the hydraulic press, consisting of a strong metal cylinder called a container, into which about 3 cwt. of molten lead is passed. After the lead begins to set, the container is gradually raised by hydraulic pressure against a stationary ram fitting into the mouth of it. In the centre of this ram there is an opening fitted with a die of the outside size of the pipe required; as the container rises against the ram a column of lead is forced up through the die. This column would form a solid roll of lead were it not for a steel core fixed in the bottom of the container and reaching up through the die which thus forms the lead passing through the die into a pipe. The size of the pipe is regulated by the die and core used, ranging from 3-16 in. $\times$ 1 lb. to the yard gas pipe, to 6 in. $\times$ 100 lb. water pipe.

THE MANUFACTURE OF WHITE LEAD.

All the manufacturers on the Tyne confine themselves exclusively to the old Dutch stack process. In days past some of them have been tempted to try one or another of the many processes which have been brought forward for trial on the large scale during recent years—we do not say invented, as most of them have been known to chemists for many years. The results, however, have been the same in every instance—money lost and experience gained—so that the old Dutch stack process still holds the field.

The works of Messrs. Foster, Blackett and Wilson, Ltd., although built 35 years ago, are nevertheless in equipment one of the most modern of the white lead works on the Tyne, being the largest and most complete of any single white lead factory in the kingdom at the present time.

The Dutch process is a very familiar one, but the following practical details are not without interest. The stacks are built in one continuous row, each stack being simply a strong brick chamber with a slated roof. In the front there is an opening, or door, 5 ft. wide running the whole height of the building. When setting a stack the floor is first covered evenly with spent bark from the tan pits. On the top of this earthenware pots are placed side by side until the bark is completely covered with them. The pots are then filled with



CORRODING STACKS AND LEAD CASTING POTS.

dilute acetic acid. The lead (cast into strips, called wickets) is then placed on the top of the pots, thus constituting a heat or height. Over the lead a complete covering of undressed deals is placed with battens at intervals to keep the deals from resting on the lead. On the top of this floor of deals another layer of bark is placed, then acid pots, lead, and so on in regular order, until the top of the stack is reached, by which time it will contain 12 layers. A final covering of bark completes the packing, which, as a rule, takes about 14 days. The stack is then left to

is accomplished so rapidly that the machine as shown in the engraving will cut a quantity of about 15 cwt. within an hour with facility. The adjusting of the universal frame for other sizes of squares may be done in five or six minutes. Fig. 2 shows the small table in position for this operation. Fig. 1 shows the machine ready for receiving a fresh block of soap, the cut block being on the small table. This machine is made by Herr O. W. Röber, of Dresden, who has an excellent name for this class of machinery.

TEXTILE SOAPS.

[SPECIALLY CONTRIBUTED.]

Soap is very extensively employed in many branches of the textile industry. There is scarcely a single fabric of any material manufactured which does not pass at one stage or another through an operation in which soap plays a part. Seeing this, it is evident that the production of textile soaps must be an important industry; in fact, there are firms who manufacture soaps for this purpose alone. The objects for which soap is employed are as varied as the textile fabrics themselves.

The quality of the soap depends very largely on the kind of fat employed, which may be of animal or vegetable origin, and also upon the care taken in the process of making; good materials may be spoiled by faulty manipulation in soap boiling as in other work.

Wool Soaps.—Soap is employed in three stages, if not more, in the manufacture of the raw wool fibre into cloth. The very first operation that wool undergoes is that of scouring to free it from grease and dirt; this is done either by treating in a warm soap liquor, or in a warm bath of carbonate of soda, or potash. Some wool scourers use a mixture of both. Many wool scourers use a very common kind of soap for this purpose, made with soda from poor qualities of fats, and consequently dark coloured, as well as often being imperfectly saponified. Bone tallow, tripe tallow, low grade palm oil, and oleic acid are much used in making such soaps. They are best left slightly alkaline, the excess of alkali being neutralised by the grease of the wool. Too great an excess of alkali, however, should be avoided, as it tends to make the wool harsh to the touch, and if soda has been used, yellow in colour. Potash gives the best soap for wool, inasmuch as the alkali has greater scouring properties, while it has little action on the wool fibre, the latter being left softer and more lustrous in appearance. A good sample of a soap for scouring wool will contain 62 per cent. of fat acids, 8 per cent. of combined alkali, $\frac{1}{2}$ per cent. of free alkali, $\frac{1}{4}$ per cent. of free fat, $29\frac{1}{4}$ per cent. of water. A soft soap will contain 50 per cent. of water, $\frac{1}{2}$ per cent. of free alkali, $\frac{1}{2}$ per cent. of free fat, 6 per cent. combined alkali, 43 per cent. of fat.

The soap should be fairly soluble, so that a good strong soap liquor can be made without being thick. Tallow and palm oil make a hard soap not readily soluble in water.

After the wool has been scoured to free it from grease and dirt, it is necessary to oil the wool before it can be spun and woven. Before the yarn or cloth thus made can be dyed and finished, it is needful that this oil be extracted, and for this purpose nothing has been found better than soap. Generally the same kind of soap is used as for the scouring. A very favourite soap because it is cheap is one made from bone tallow and cotton oil; this soap lathers pretty freely, and it is usually considered that a soap which makes a good lather clears the wool from the oil fairly well. Another good soap is made from palm and cotton oil. In the case of soaps for removing oil from wool, it is of very great importance to use one of good quality, or it may not remove all the oil, thus causing uneven shades in the subsequent dyeing operations. It is also important that the soap itself should contain nothing which would be liable to fix upon the wool and interfere with the dyeing. The fats employed ought to be quite pure, and free from any unsaponifiable matter. For this reason bone tallow is not good, as it contains some phosphate of lime and carbonate of lime, as well as animal matter. The lime has a tendency to form lime soaps, which eventually get on to the wool, forming grease spots. Recovered greases should not be used, as they often contain perceptible quantities of unsaponifiable matters. A soap made from pure fat has none of these defects.

Woollen cloths after being woven and dyed have to be milled or fulled. This operation causes the fibres to felt together, and so make a more durable and less impervious cloth. This milling is also accomplished by working the goods in a soap liquor.

The soap here has very little actual work to do, its principal function being that of a lubricant facilitating the movement of the fibres one over the other and assisting the process of felting. But even if the soap has not much actual work to do, there are still some things it must not do. It must not cause the colours of any dyed material to bleed, nor must it change the tone, or dull the hue of any dyed goods. This can only be avoided by the employment of a soap as free from alkali as possible. A perfectly neutral soap is best. Such a soap requires care in making. The soap too ought to have good lathering properties and be pretty freely soluble in water. It is therefore best made from olive, cotton, or other similar oils. Tallow and palm oil do not yield good lathering soaps. A potash soft soap is the best, but it is rather more difficult to make of the desired degree of neutrality.

Cop Soap is used in the spinning of cotton. It has been found that by smearing the bottom of the cop spindles with a little soap the bottom of the cop is formed better, due to the threads adhering together. For this purpose, a soft soap is found to be the best. It ought to be free from colour, hence these soaps should be made from tallow, olive, ground nut or coco-nut oils. They should also be free from mineral oil or paraffin wax, as such have a tendency to soak into the cotton fibre, and cannot readily be extracted, thus causing stains when being bleached or dyed.

Calico Printers' Soap.—The calico printer makes great use of soap. He employs it first to cleanse the calico from the gum or other thickening agents which he is obliged to add to his printing colours. Then it often has a brightening effect, as with alizarine colours.

Most calico printers prefer to employ a soap made from palm oil for this purpose, chiefly on account of the fact that palm oil makes a soap which has a pleasant and agreeable odour, and does not easily turn rancid. Tallow, cocoa-nut oil, and castor oil, while making soaps which are satisfactory in other respects, often turn rancid, especially in the case of the last two oils. The soap must be well made, and, above all, must not contain more than traces of free fat and free alkali, the latter acting upon the colours and changing their tints. A good printer's soap will have a composition approximating to the following:—Water, 23.5%; alkali as soap, 9.0%; alkali, free, 0.2%; fat, free, 0.2%; fat as soap, 67.1%.

Olive oil soft soaps are also used by calico printers for much the same purpose; these are easily made by boiling olive oil and potash together.

Softeners.—In the finishing of cotton cloths what are known as softeners are much used. These are nothing more than highly watered soaps. The writer has found as much as 80 per cent. of water in such materials. This quantity is rather excessive, but from 50 to 60 per cent. is permissible. Softeners vary very much in composition: some are simply made by taking an ordinary tallow or bleached palm oil soap and boiling it in water until melted, then allowing to cool. Others are made direct from tallow, palm oil, or coco-nut oil, and then thinned down with water to the required degree of consistency. Another form is made from coco-nut oil by means of a cold process. Sometimes paraffin wax is added. Softeners should be white in colour, they therefore ought to be made from tallow, bleached palm oil, coco-nut oil, castor oil, or other white oils. They ought to be neutral in properties, so that they do not affect the colour of any printed or dyed goods they may be brought in contact with.

Silk Soaps.—For degumming silk nothing has been found better than a good olive oil soap. A silk soap should possess the following properties. It ought to be neutral, inasmuch as alkali tends to make the silk somewhat harsh and reduce its lustre, and it should be easily soluble. The soaps used in the boiling off of silk must be well made curd soaps, using as slight an excess of alkali as possible and well salted out. The soap must also be capable of being readily washed out of the silk. A soap well made with potash and olive oil would be found to give excellent results in the boiling off of silk.

LUBRICATING GREASES.

[SPECIALLY CONTRIBUTED].

These greases are made of a great variety of materials, good, bad, and indifferent, for some anything is thought to be good enough while there are others which are made of good materials for lubricating certain special bearings where no other kind of lubricant can possibly be used.

To these greases fancy names are often given, more or less descriptive of the particular purpose for which the grease is to be employed, while some of the names are altogether fancy, and are not indicative either of the use or the composition of the grease.

Most lubricating greases are made by treating a grease oil or fat with an alkaline body, when a soap is made, which, amalgamating with the rest of the oil, makes the latter stiff and greasy. The two alkalies chiefly used are lime and soda, the former when crude, rough greases are required, the latter when better qualities are desired, although some greases do not contain any alkali at all. Sometimes, what are known as fillings, are put in; these consist of such bodies as powdered gypsum, mica, french chalk, black lead, etc.; some of which add to the lubricating value of the grease, while others do not, and are put in to make the grease apparently stiffer.

The following oils and fats are used in making these lubricants:—

Palm Oil.—This material is used in making the best qualities of loco greases. For this purpose the poorer qualities of palm oil, which are rich in free acid, give rather better results than the best qualities, because during the process of making the acid enters into combination with the alkali used and forms a soap which amalgamates with the remainder of the oil and any other oil substance added to form the grease. If the palm oil contains little free acid, it is obvious that this saponifying action cannot take place, and the formation of grease takes place imperfectly.

Tallow is frequently put into greases. Of course only the commoner qualities are used, as the finer grades have greater value as soap stock.

Oil foots of all kinds are commonly used. They are scarcely usable for any other purpose, owing to the colouring matter and other impurities they contain.

Rosin Oil is one of the commonest grease materials, and generally the crude grades are thus employed; two or three such grades are made and distinguished as "soft," "medium" and "hard," the latter being that chiefly used in lubricant making. Crude rosin oil is a thick material containing some portion of solid matter. It is acid in character, the degree of acidity being greatest in the "hard" rosin oils and the least in the "soft." Besides this acid the oil contains some hydrocarbon oils, and oils which are more or less acted on by alkalies. Rosin oil is used chiefly in combination with slaked lime, using about three times as much oil as lime. When well mixed the mass is placed on one side for a few hours. During this period most of the water with which the lime was slaked exudes. If a better quality of grease is required, a mixture of rosin oil and palm oil is used. Rosin greases possess the feature of being rather repellant to water, and therefore they are suitable for gearing which is exposed to the weather.

Anthracene Oil is a bye-product obtained from coal tar; it is a dark greenish brown liquid oil, the colour however varying considerably. It is rather heavier than water, the specific gravity being 1.065 to 1.100. It smells strongly of tar oils. Mixed with lime it forms a thick but oily grease. It is a cheap material, probably the cheapest of all the grease stocks, and is therefore much used in making the cheaper qualities of greases.

Yorkshire Grease or brown grease is often added in larger or smaller proportion to these lubricants. It is a stiffish grease of very variable composition, and is made by treating the soap liquors obtained in the scouring of raw wool. It is very acid in character, and is consequently easily transformed into a soap by means of lime or soda, and forms a very stiff grease which does not melt easily. The peculiarity of brown grease is that it contains a body known as cholesterine, the true wool fat, which has a high melting point. It has the property of taking up a large proportion of water.

Dark Petroleum Oils are often mixed with greases to give them greater lubricating powers. These oils are of brownish colour, varying in consistency from liquid oils (summer dark) to thick, tarry oils (cylinder oils). They are perfectly neutral, and have no power of combining with alkalies; they will dissolve soap when the latter is presented to them in a dry condition. These oils are fairly cheap. In some of the better qualities of greases the filtered petroleum oils, which are of a pale brown or yellow colour, are employed.

Regarding the use of caustic soda and lime, little need be said. The former gives smoother greases than the latter, and its soaps are more easily soluble in the other oils. Lime is the cheaper of the two, and is hence used in making the cheapest greases; it gives stiffer greases than soda, which have a higher melting point.

Of the filling materials used, gypsum, or mineral white, has no lubricating power at all; French chalk possesses some slight lubricating properties, being smooth and soft to the touch. Black lead, or plumbago, is a well-known lubricant, especially for wood.

MANUFACTURING RECIPES.

The following details, showing the method of making various kinds of lubricating greases, will be found of service:—

Wheel Grease.—Take 5 lbs. of quicklime and slake it with 20 lbs. of water; then sieve well, and stir into the lime-paste four gallons of "soft" crude rosin oil; then allow it to stand for 12 hours. Pour off the water, and stir in five gallons of anthracene grease oils. Now heat the mass to 240° F., stirring well the whole time, until a good mixture is obtained.

Tram Grease.—Take 10 gallons of anthracene oil and stir in a paste made from 5 lbs. of quicklime, well slaked, and mixed with 5 lbs. of ground gypsum; then heat up as before. In heating greases containing water care must be taken, as they froth a good deal, and hence a capacious vessel must be used. Too prolonged heating is to be avoided, as with some greases so doing reduces the stiffness very considerably.

Hot-neck Grease.—Take 20 lb. of a good soap, cut in thin flakes, and dry it. Then take 30 lbs. filtered cylinder oil, and 30 lbs. 915 petroleum oil. Mix the two together, and heat to 240° F. Then add the soap, and stir well, maintaining the heat until the soap and oil have amalgamated, when the mixture may be allowed to cool down. When cold it will be found to be stiff.

Axle Grease for Wood.—Take two gallons of rosin oil, and stir in 5 lbs. of quicklime, slaked with two gallons of water, then stand for 12 hours, or until the next day. Pour off any water which may separate, then stir in five gallons of coal tar grease oil and 5 lbs. powdered black lead. Generally it will be found sufficient to mix the materials cold, but a little heating will make a more homogeneous grease.

Loco Grease.—A common kind of loco grease can be made from 60 lbs. Yorkshire grease mixed with 20 lbs. of Summer dark oil, and heated with 6 lbs. quicklime, slaked with two gallons of water. The best loco grease is made from palm oil, tallow, seal oil, and soda crystals. The soda crystals are dissolved in about an equal weight of water, and then stirred into a melted mixture of the fats. The proportions used are varied according to the season of the year. In summer a stiffer grease can be used than in winter. This variation is attained by using more palm oil and soda crystals in summer than in winter, while it is also the custom to add a little more sperm or seal oil in winter. The proportions can be varied to some extent. Too much soda should be avoided, as any excess tends to make the grease hard.

A WORD FOR MICROBES.—Dr. J. Holt, speaking upon germ life says: As the movement of a chronometer depends upon the perfect poise and regulating action of the balance, so does the scheme of life depend upon the compensation balance called germ-life. From this complicated mechanism working through all its parts in reciprocating harmony as a unit—strike out to-day this micro-organic balance trembling through the appointed arc of vibration in fine adjustment, these unseen pullers down and builders up, and to-morrow would witness a wilting and famishing, the prologue to the tragedy of universal death upon this planet; a premature enactment of the general doom.

A NEW EXTRACTING APPARATUS.

There are few industries at the present day which have not, within the last fifty years or so, undergone more or less complete revolution.

But, though the progress in methods of manufacture has been vast and rapid, there are still a few industries which have changed but little, and the oil industry is one of them. If we consider the great improvements that have been effected by chemistry in most industries, it seems strange that oil should still have to be separated from seeds, &c., by the comparatively crude method of mechanical expression. Despite the perfection to which this method has been carried, chemical extraction has a great advantage over mechanical in regard to the yield. In the case of porous materials especially (such as cottonseed), this would often mean a double yield of oil with much less labour, and hence less cost.

Before describing the latest attempt in this direction, it will be as well to briefly consider the nature of these conditions, and the chief difficulties that had to be encountered.

The most important step is recovering the ether or other solvent from the waste product in the macerator. These macerators must necessarily be a considerable size, and when extraction has been completed, there is left behind a large bulk of starch and husks (in the case of seeds) saturated with solvent, which must be distilled off before the macerators can be emptied, and here lies the chief difficulty. The material left in the macerator is a bad conductor of heat, and therefore it is very difficult to heat the mass sufficiently to ensure complete volatilisation. To this a second difficulty is added by the fact that the volatilisation of the solvent is attended by a great depression of temperature in those parts, which are not readily reached by the heat of the steam. The writer, who has had considerable experience with this kind of apparatus, found on one occasion such a charge completely dry and hot at the sides while the centre was a frozen mass. But further, when the solvent has to be driven off by live steam the material gets "cooked," and when taken out is in a moist state, which in many cases is detrimental.

The apparatus described below has been designed with a view to overcoming all these defects. Instead of passing the solvent through a the solvent, the latter flowing, at the same time, in a contrary direction. How this is effected will be best understood by a reference to large mass of material the material to be extracted is passed through the accompanying illustration: C, C₂, C₄, C₆ and C₈ are cylinders alternately communicating with each other at top and bottom, in which

carried upwards by a screw to C, where the first cylinder communicates with the second, falls on to the screw working in C₂, is carried downwards and falls through the communicating channel C₃ on to the next screw. This again forwards the material in an upward direction, in turn being carried downward in C₅, and up again in C₆, in the upper part of which there is a squeezing arrangement to express the excess of solvent, after which the material falls through D into the kiln E provided with a steam jacket and forwarding screw, in which the exhausted material is deprived of the residual solvent. This is here easily effected, as the material is spread out in a thin layer over a large heated area. The vapours, which are considerably heavier than the air, and hence have a downward tendency, are allowed to escape at the lower end of the kiln, and are condensed in their passage through 11, collected in receiver 12, and pumped back into the machine at 1.

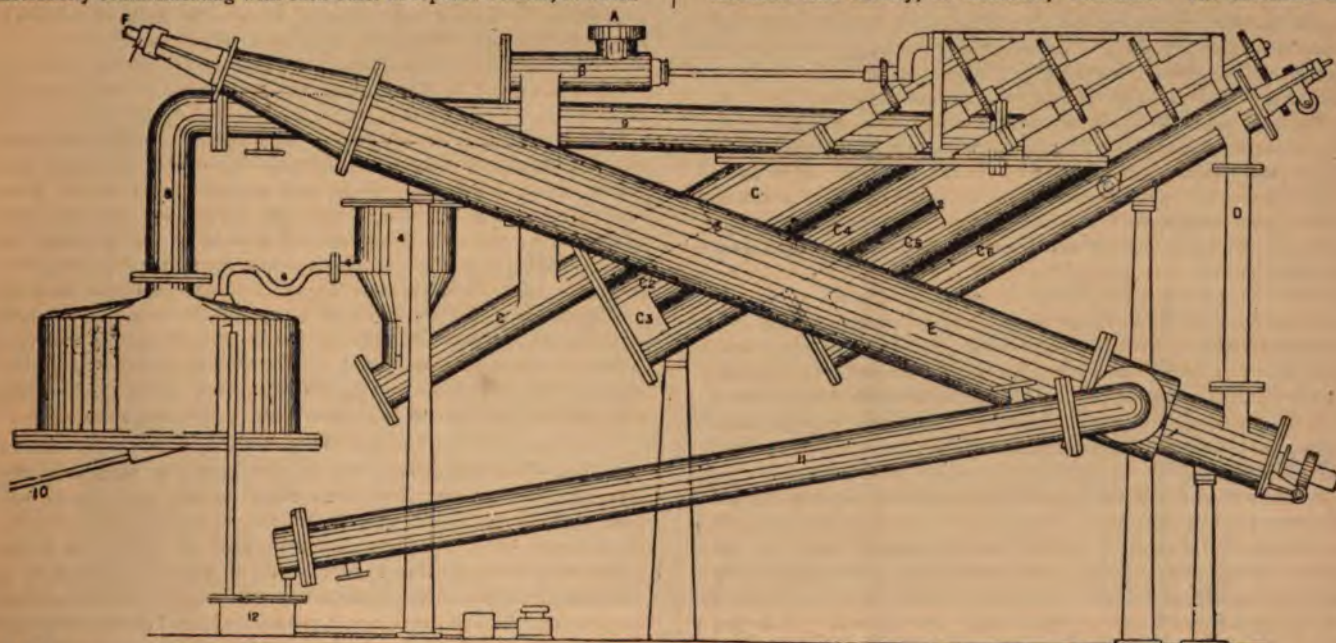
While the material thus travels from left to right, the solvent flows in an opposite direction, whereby the partially-extracted meal, &c., meets in each successive cell with a purer stream of solvent, thus ensuring nearly complete exhaustion. On the other hand, the solvent comes successively in contact with material richer in oil, finally passing into the first cell (the last, as regards the direction of the solvent), where it meets with the largest quantity of oil, passes through a filter 4, and thence into retort 7. This latter part of the apparatus is provided with several trays, each steam jacketed, over which the mixture of oil and solvent flows in a thin stream; the solvent being volatilised and condensed, while the oil flows out in a continuous stream at 10.

The whole process is continuous and automatic, and the plant requires very little attention. A man and a boy can manage four plants.

One very important feature in connection with this apparatus is that the material, after the extraction of the oil, can be stored for any length of time, as the material is not in any part of the process subjected to the action of steam, the drying being effected in steam-heated pans. Many materials when subjected to the action of steam give up or loose to some extent their manurial properties.

The apparatus has been worked successfully with various seeds and waste products. In the case of fish, a guano has been produced containing 13% of ammonia, the usual percentage in this material being about 10%. The guano is turned out practically free from oil, and in a clean, dry condition.

The apparatus, which has been patented in this and most foreign countries, can be seen in operation at the works of Messrs. Cole, Marchent and Morley, of Bradford, Yorkshire. The inventors are



spiral conveyers work. The material is fed in at A (which when not at work is hermetically closed by a water seal), forwarded by a screw working in B, and falls down the vertical shoot into C. There it is

Messrs. Dombrain and Trumper, and the patent rights have been acquired by the Lightning Oil Extractor Syndicate, whose offices are at 27, Kirkgate, Bradford.

REMINISCENCES OF JOHN DALTON.

THE past year having been the 50th anniversary of the death of the great chemist and philosopher, John Dalton, F.R.S., a very fitting step has been taken by those in the neighbourhood of his native village in the erection of a memorial tablet to mark the humble cottage in which he was born.

By way of supplement to this movement, the following particulars about the early surroundings of John Dalton have been compiled, so that after the elapse of another half century a reliable account of the

As a youth he was by no means bright, being undemonstrative to a degree both at work and play.

The first evidence of mental capacity, above the ordinary, for a country lad of ten, was his unaided solution of the difference between sixty square yards and sixty yards square, a point which had been the subject of a dispute between two labourers. The dogged perseverance by which he conquered this first problem, is characteristic of the man throughout his life. This propensity is further strikingly illustrated by another incident which occurred a few years later, and which is related by Dr. Lonsdale in his life of Dalton. Occasionally Dalton's higher



places associated with his youthful days which are at present in existence may be available for the future generation of chemists. It is desirable that at the very outset due acknowledgment should be made to Mr. Voudale, of Cockermouth, a distant relative of John Dalton, to whom we are indebted for certain local particulars, as well as for the loan of his private and authentic photographs which are here for the first time reproduced.

Apart from Lancashire being the centre of the chemical industry, it is a matter for additional and justifiable pride that Dalton was essentially a man of Lancashire. Though born at Eaglesfield, a small village near Cockermouth, in Cumberland, the most eventful portion of his life was spent in Manchester, to which city he came when 27 years of age. Moreover his surname was, according to his own showing, of Lancastrian origin, Dal-ton being derived from Dale-town, a village in Lancashire. It is also interesting to know that he came of artisan and not yeoman parents, his father having been a weaver; though on his mother's side the yeoman stock of which she came can be traced several generations back.

The actual date of his birth was not known, no record of the event having been made by his father in the Quaker Register of Births. As a child, birthdays were unknown to him, and consequently when in later years he became famous, it was only by careful and laborious enquiry that the date recorded on the memorial tablet was arrived at. In this connection it is interesting to recall the fact that the case of John Dalton is not an isolated one. The date of the Duke of Wellington's birth has always been uncertain as far as the precise month is concerned, while the date of Voltaire's advent was likewise lost in obscurity.

The first of the views here reproduced, shows the house in which John Dalton was born. The house has since then been added to, but the actual room remains intact, and is that seen on the right of the view No. 1, with a lean-to porch and only one window. View No. 2 shows the house to which his parents moved after his birth, and in which his early youth was passed, helping his father as soon as he was old enough, by holding spools to prepare shuttles and such like.

faculties were tested by a Mr. Robinson who was encouraging him in self-culture by setting him an algebraic problem.

Once on such an occasion, the problem being rather harder than usual, Mr. Robinson enquired after an hour if he had solved it. "No" said Dalton, "but yan med deu't (one might do it). At bed time, Mr. Robinson repeated his former interrogation, to which Dalton replied, "I can't deu't to-neet, but mebbly to-morn I will." He went home and slept over it, and in the morning attacked the problem with a renewed vigour that brought the desired solution.

At thirteen years of age he opened a school for girls and boys. This school was first held in the barn, which is shown in view No. 3. The door remains, but the window has been bricked up. Its position, however, can easily be ascertained, as the timbers leaning against the side of the barn are just on a level with the top of the window. It was above this window that he first displayed his notice of having opened a school, and that "pens, ink, and paper" were obtainable within. As time went on and the school grew, it was for a time held in his father's house, and subsequently moved to the "Friends' Meeting House" shown in view No. 4. This meeting house, apart from its association with John Dalton, is historically interesting, as being one of the first ever built in England. In the foreground is Mr. T. Norman, the only contemporary of John Dalton living in Eaglesfield, whom he well remembers, being now 70 years of age; so that when Dalton died he (Mr. Norman) would be a young man of 20.

When all but seventeen John Dalton left his native village and went to Kendal. Here he kept a school for some time with his brother. In 1793, however, he came to the New College, Manchester, to teach mathematics and natural philosophy.

The portrait of John Dalton that we have been enabled to produce is a copy of the authentic painting which was looked upon by his friends as being the most representative and truthful, in that it gives as true a conception of the man as it is possible to gain from an inanimate picture. It represents him in the neat Quaker attire in which he was invariably dressed. To judge from his hat, which by the way is still in the possession of the Manchester Philosophical Society, it is evident

that Dalton's head was of the brachycephalic type. In this respect he bore a singular resemblance to Sir Isaac Newton, and, according to Mr. Woolley, of Manchester, when a cast of Newton's head was placed near Dalton after his death, the resemblance was even more striking. In his general demeanour and scientific methods, however, he was more to be compared to his eminent contemporary, Gay-Lussac. His literary attainments were not great, though he worked out a new system of English grammar. A good tale is told illustrative of his poor opinion of the prevailing methods of teaching grammar. When once present during the examination of the Quaker School at Brookfield, the master enquired if he desired to ask the children any questions. The subject of the examination had been grammar, and the text book employed that of Lindley Murray. Dalton declined the master's offer, adding "that of all the contrivances ever invented by human ingenuity to puzzle the brains of the young, Lindley Murray's Grammar was the worst."

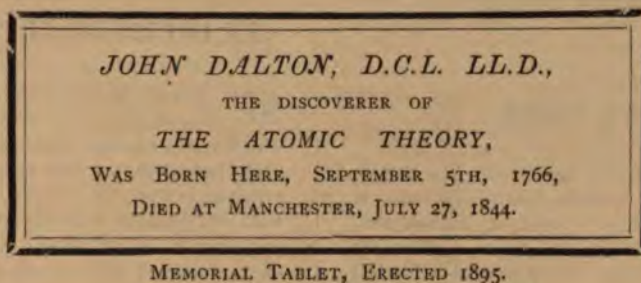
His refusal of the honour of knighthood was characteristic of his inherent independence. When talking over his presentation at the Court of William IV. with an esteemed friend in Cumberland, his friend enquired what the King said. Dalton told him that the King

to address the King in such a commonplace way. John Dalton's reply given in his own broad dialect was even more characteristic. "Mebby sae," he answered, "but what can yan say to sech like fowk."

He had a sort of contempt for what is generally known as "genius," and always contended that whatever he had achieved beyond the ordinary was the result of arduous and unrelaxed application, coupled with an indomitable perseverance. That in after life he fully recognised these qualities as the ground work of his success there can be no doubt, and he never missed an opportunity of expressing this opinion. The following anecdote instances this somewhat forcibly: Entertaining a friend and his son on one occasion, he enquired of the son about his studies and progress. After some conversation on the subject, he tersely remarked "Thou

seems to have better talents than I possessed at thy age; but thou may want the thing that I had a good share of—perseverance."

After being about twelve years in Manchester he went to live in Faulkner-street with the Rev. W. Johns. He was most methodical in his habits, whether working, eating, or indulging in his customary amusement of bowling. One afternoon a week he attended a bowling club which met alternately at Broughton and Stretford. He played



said, "Ah! Dr. Dalton, how are you getting on at Manchester? All quiet I suppose;" to which Dalton replied, "Well, I don't know; just middlin' I think." His friend, while amused at his bluntness, expressed the opinion that it was hardly in accord with Court manners

with earnestness and zest. After tea he enjoyed his "Virginian the snug parlour of the well-known "Dog and Partridge," returning to town to observe his barometers and take supper at nine. The afternoon set apart for this diversion was Thursday, his explanation being

Market Reports.

LIVERPOOL MINERAL MARKET.

ound manganese is moving freely at £6.10 to £12.10s., according to ty. Manganiferous ore remains unaltered, at 16s. to 17s. 6d. per i.f. in cargo lots for good quality. Bauxite, Irish Hill brand, is in demand, and sales have been steady at 20s. for first quality, or seconds, and 12s. for thirds. The enquiry for the manufacture of minium is becoming stronger, with every appearance of being still increased. Chrome ore: There are two small arrivals to this week, one in the Mersey and one in the Thames, but both gone straight into consumption, being sold forward, leaving the stock still perfectly cleared, so that with the strong demand prices are maintained, at 65s. to 70s. for 40%, and 110s. to 115s. for 50% chalk: There were arrivals of this during the week, but the best portion went into immediate consumption, so that stocks are somewhat reduced. With the present inclement weather most of mines are stopped, and it may be some time before we receive any new arrivals; consequently better prices may be looked forward to. "Angel White" and "Gold Medal" brands at 75s. to 110s. per ton. Barytes: There is more enquiry for lump carbonate, but stocks small and the better qualities are very scarce. Smalls, at 70s. to lump, 90/95%, at 100s. Sulphate: This is also in more enquiry, mainly good ground qualities, and prices are firm at 55s. to 80s. per ton. Wolfram and scheelite are unchanged, with good enquiry. Tungsten continues unchanged. Plumbago is in brisk demand, good business is being done at £5. to £6. for founders' qualities; qualities at £8. to £10. per ton. Arsenic continues very scarce, its earth is steady, and a fair business is being done at 80s. to 100s. for ground, and 60s. to 70s. for lump.

TAR AND AMMONIA PRODUCTS.

nzols are still the same. Carbolic acid is very steady, with 60% at 1s. 9d., and 40% crystals at 5½d. Crude naphtha is unchanged, and solvent is dull at 1s. 2½d. Creosote is unaltered. Pitch is steady at recent values. Sulphate of ammonia is dearer and firmer, a fairly good amount of business having been done at full prices. Beckton is quoted at 2s. 6d., London outside makes £11., Liverpool, Hull, and London at £10. 17s. 6d. to £11.

REPORT ON MANURE MATERIAL.

The market continues quiet all round, and prices remain about the same as last reported. The nearest value of 75/80% Florida rock, steamer shipment, is 7½d. per unit, in cargoes c.i.f. to good ground Kingdom ports; of 55/60% South Carolina River rock, 6½d. per unit; of 60/65% Peace River rock, 6½d. per unit, and of 60/65% Cuban 6½d. per unit. The position of River Plate cargoes of bones altered, and the nominal value is £4. 8s. 9d. to £4. 10s. per ton. Good East Indian bones offer at £4. 12s. 6d. per ton for shipment, but finding buyers; on spot retail sales have been made of Bombay meal at £4. 12s. 9d., but £4. 12s. 6d. would do for December, and 8s. 9d. has been accepted for January-February steamer shipment. Non-grinding bones are inquired for, and up to £4. 11s. 3d. per ton ex quay Liverpool, paid for a West Coast parcel suitable for firing. Nitrate of soda is unchanged: on spot ordinary quality may be had at 8s. 9d. per cwt., fine quality at 8s. 10½d. per cwt., and at 9s. per cwt. Due cargoes are worth about 8s. 10½d. per cwt. owing to the low price touched by sulphate of ammonia, all nitrogenous material has fallen in value, and as low as 9s. 3d. per unit, ex quay Liverpool, has been accepted for River Plate dried blood.

MISCELLANEOUS CHEMICAL MARKET.

Business generally has been fairly satisfactory during the past week. Caustic soda continues in good demand, but without change in price. Caustic soda sells freely, but prices remain below the average—current quotations are as follows: f.o.b. Tyne, 77%, £10.; f.o.b. Liverpool, 74%, £8. 17s. 6d.; 70%, £7. 17s. 6d.; 60%, £6. 17s. 6d. per ton, 10-ton lots and upwards. Chlorate of potash still in request: 5½d. per lb., f.o.b. Liverpool, is full value to-day; dull at 7½d. per lb. Nitrate of soda moves steadily at 8s. 9d. to 9s. per cwt. Soda crystals quiet at 37s. 6d. bags, and 42s. 6d. casks, makers' works. The advance in sulphate of copper is maintained, there is good inquiry: £15. 10s., f.o.b., is to-day's quotation.

Acetates generally are unchanged: soda is offering at £14. 10s., c.i.f.; lime, brown £5. 17s. 6d., grey £9. 10s. per ton. Foreign white sugar of lead £24. Prussiate of potash is slightly easier, but price nominally is without change. Borax flat and nothing doing, Bichromates in better request. Sulphocyanides quiet. Carbolic acids stronger: crude, 60%, is quoted 1s. 9d. per gallon, and crystal, 39/40°, has advanced ½d. per lb.

TYNE CHEMICAL REPORT.

TUESDAY.

The chemical trade is still without sign of improvement, and prices generally remain unaltered. It is understood that negotiations with the men are proceeding satisfactorily with a view to an early resumption of work at the principal manufactories on the Tyne.

Bleaching Powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, nett; caustic soda, 76/77%, £9. 15s. per ton, nett; do., 70%, £8. 15s. per ton, nett; recovered sulphur, 2 cwt. bags, £4. per ton, nett. Soda ash, 48%, £3. 15s. per ton, nett; do., 52%, £4. 2s. 6d. per ton, nett; do., 56%, £4. 10s. per ton, nett; alkali, 36%, £2. 15s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. 15s. per ton, nett; do., 52%, £5. 5s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £5. per ton, nett; do., 1 cwt. kegs, £5. 10s. per ton, nett; silicate of soda, 75° Tw., £2. 17s. 6d. per ton, nett; do., 100° Tw., £3. 12s. 6d. per ton, nett; do., 140° Tw., £4. per ton, nett; soda crystals, casks, £1. 16s. 6d. per ton, nett, gross weight; do., 2 cwt. bags, £1. 16s. 6d. per ton, nett; chlorate of potash, 5½d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £4. 2s. 6d. per ton, nett; blanc fixe, £7. 10s. per ton, nett; chloride of barium, £7. 10s. per ton, nett; carbonate of alumina, £28. 15s. per ton, nett; aluminate of soda, £33. 15s. per ton, nett; in 5 ton lots, £28. 10s. per ton, nett.

SALT is still steady, and is quoted 9s. 6d. per ton, f.o.b. Tees.

COALS.—The market is somewhat unsettled, a large number of steamers being delayed by the recent storm with the result that several collieries being short of orders are idle for the moment. Best Northumbrian steam, 8s. 9d. to 9s. per ton; small steam, 3s. to 3s. 3d. per ton; best Durham gas coals, 7s. 3d. to 7s. 9d. per ton; coke steady, 14s. 6d. to 15s. 6d. per ton. Prices of other qualities of coal unchanged.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil, though continuing quiet, has been steady with a very fair amount of business doing in Accra, Bonny, and Old Calabar. Lagos has also been sold at £21. Olive keeps steady with a satisfactory business doing at good prices. The firmer feeling in linseed continues, and prices are still further advanced, Liverpool makes in export casks now being quoted 21s. 6d. to 22s. per cwt. Cottonseed is unchanged as regards prices, which are 18s. 3d. to 19s. for Liverpool refined and 19s. for American, with a quiet market. The demand for castor oil keeps small, and prices are inclined to be easier. Good second Calcutta is quoted 2½d. per lb., and first pressure French 2½d. to 2½d. nominally. Prices for tallow keep the same, and the demand is quiet. Resin is steady as far as regards holders, but the demand is quiet, so that it is hard to say how long the present position will be maintained. Spirits of turpentine are dearer, 21s. 3d. per cwt. now being spot price. Petroleum is steady, with American at 4½d. to 5½d. and Russian refined 4d. per gallon.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

Buyers of sulphate of ammonia, in calculating last week that there was to be a further fall, happened to be right, for the price lowered slightly even after last despatch, and as low as £10. 12s. 6d. for spot delivery was accepted in more than one transaction. This proved to be the bottom, for the time at least, and there has since been some perceptible mending. The prompt price is now not less than £10. 15s., or it might be stated at even a little higher. For forward delivery (January to March) £11. has been paid since last writing.

Production over the chemical works in Scotland is now about fully resumed after the holidays, to the extent, at least, at which it is meant to be maintained for some time to come. The feeling in caustic soda is said to show some signs of coming improvement, but prices are not taking up yet, neither in this nor any of the other lines. On the whole, however, the sentiment tends in the direction of some improvement when the New Year is somewhat farther advanced.

Chief prices current are:—Soda crystals, 35s. nett, Tyne; soda ash, 48/52°, £3. 17s. 6d. to £4. 5s. nett, Tyne; white alkali, 48/52°, £4. 10s. to £5. 5s. nett, Tyne; alum in lump, £5. 10s. nett,

Glasgow; caustic soda, white, 74° £9., 70/72° £8., 60/62° £7., and cream 60/62° £7., all nett, Liverpool; bleaching powder, £7. 5s., nett, Tyne; saltcake, 17s. 6d.; borax, English refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4½d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3¼d. nett, f.o.b. Glasgow); chlorate of potash, 5¼d. less 5%, Liverpool; nitrate of soda, 9s.; sulphate of ammonia, £10. 15s. to £10. 16s. 3d. prompt, f.o.b. Leith; sal-ammoniac, first and second white, £39. and £37. nett, any port; sulphate of copper, £15. 10s. less 5%, Liverpool; paraffin scale, hard 1¾d.; soft, 1¾d. to 2d. per lb.; paraffin wax 120° semi-refined, 2¼d.; paraffin spirit (naphtha), 7d. per gallon; paraffin oil (burning), standard No. 1 grade, 4¾d. at works, for Scotch buyers (English sales, ½d. to ¾d. lower); ditto (lubricating) 865° £4. 5s.; 885° £4. 10s., and 890/895° £5. to £5. 10s. Week's imports of sugar at Greenock were nil.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—The demand has not been equal to expectations for the New Year. The principal imports up to date in 1895 and 1894 have been: Linseed 12,642 quarters, against 10,825 quarters; rapeseed 11,466 quarters, against 6,058 quarters; cottonseed 5,137 tons, against 11,097 tons; olive oil 759 casks, against 177 casks; rape oil 240 casks, against 345 casks; tallow 1,107 cwt., against 2,358 cwt.; bones 50 tons, against 445 tons; turpentine 2,952 barrels, against 20 barrels. Refined cotton oil has been rather firmer, but closes lower and dull, at 16s. 1½d. naked spot; January-April offer at 16s. 4½d., and May-August at 17s. 1½d. Crude ditto, 14s. 6d. naked spot; barrels, 25s. per ton; and ordinary casks, 17s. 6d. per ton extra. Export for the week, 3,160 cwt. Linseed oil steady, at 19s. 6d. naked spot; January-April, 19s. 4½d.; May-August offer at 18s. 10½d., and September-December at 18s. 6d.; boiled and refined ditto from £1. to £2. per ton extra. Turpentine, 21s. 3d. for American. Castor oil, first pressure, 2¼d. per lb. Tallow from £25. to £25. 10s. for town melted. Olive oil from £31. to £38. per tun, according to quality. "Vegaline," a new vegetable butter, sweet, white, and neutral, for culinary and confectionery purposes, £30. per ton. Cod oil quiet, £16. to £18. per ton. Soft soap, 14s. 6d. per cwt. Sod oil, for curriers, etc., £15. to £22. per ton. Boiled drying oil, £13. per ton. Engine and cylinder oils from £12. to £24. per ton.

CAKES.—Linseed cakes firm: 95% pure, £6. 7s. 6d. to £6 10s.; Russians, £6. 5s. to £6. 10s. Oil cakes, £5. 7s. 6d. to £5. 10s. Cotton cakes steady: best makes, £3. 10s. to £3. 12s. 6d.; seconds, £3. 7s. 6d. to £3. 10s. Rape cakes unchanged.

PAINTS.—Makers are exceedingly busy both in orders for the home and foreign markets. Prices are:—Dry colours: Venetian red from £3. 15s. per ton; oxide of iron from £7. to £18. per ton; blue black, £4.; mineral black, £4. 5s.; and yellow ochre, £3. 15s. per ton. Venetian red, black, blue, green, yellow, ochre, and red oxide paints can be bought from £12. per ton. Zinc oxide paint from £20. to £25. per ton. White lead, in oil, £17. per ton. Paint remover from 25s. to 30s. per cwt. Black varnish, £5. 10s. per ton, in barrels, f.o.b. port; copal varnish from 7s. 6d. per gallon; oak varnish from 5s. 6d. per gallon. Enamels, 4s. 9d. and 8s. 6d. per dozen. Ready-mixed paints, in assorted sizes, lever tins, £25. per ton. Chromes from 6d. per lb. Ultramarines from 3d. to 8d. per lb.

New Companies.

Barnes Soap Co., Ltd.—CAPITAL, £5,000., in £1. shares. This company has been formed to acquire, and take over as a going concern, and carry on the business of an existing company registered under the title of The Barnes Soap Co., Ltd., and to enter into a certificate of incorporation for that purpose.

James Woolley, Sons, and Co., Ltd.—CAPITAL, £10,000. shares. This company has been formed to acquire and the business of pharmaceutical chemists and wholesale druggists, now carried on by G. S. Woolley, H. Woolley, and J. Woolley, at 12, Victoria Bridge-street, Salford, at Knowsley-street, and 67 and 69, Market-street, Manchester, under the style of James Woolley, Sons, and Co., and James Woolley. The subscribers' memorandum of association are: G. S. Woolley, 12, Victoria Bridge-street, Salford, chemist; H. Woolley, 12, Victoria Bridge-street, Salford, chemist; C. A. Johnstone, 12, Victoria Bridge-street, Salford, chemist; E. J. Woolley, 12, Victoria Bridge-street, Salford, chemist; E. S. Johnstone, 12, Victoria Bridge-street, Salford, chemist; Blair, 69, Market-street, Manchester, chemist; J. H. Knowsley-road, Cheetham, Manchester.

The Patent List.

This list is compiled from Official sources in the Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.
Softening Water. W. Brothers. 10. January 1.
Antiseptic Compound. W. Brothers. 11. January 1.
Enriching Coal Gas. S. Schofield. 15. January 1.
Extracting Precious Metals. E. Fischer, E. Klein, and F. Mahler. 16. January 1.
Pulverising Machines. J. Holman. 21. January 1.
Method and Apparatus of Extracting Sulphur. R. Turvet. 22. January 1.
Manufacture of Cyanides. G. T. Bieby. 136. January 2.
Apparatus for Purifying Sewage, etc. F. P. Candy. 166. January 2.
Manufacture of Pure Ammonium Carbonate. C. Raspe. 199. January 2.
Manufacture of Briquettes. J. L. O'Flynn and A. Beaugreot. 209. January 2.
Pumps. J. Keith. 250. January 4.
Electric Ore Crusher. F. Hodge. 251. January 4.
Artificial Fuel. G. Hüttemann and G. Spieker. 283. January 4.
Improvement in Funnels. W. P. Warren and A. P. Foot. 283. January 4.
New Colouring Matter. A. Lieberman. 292. January 4.
Electrolytic Separation of Tin from its Alloys. C. F. Claus. 297. January 4.
Manufacture of Pigments or Colours. H. D. B. Wall. 306. January 4.
Kiln for Burning Lime and Bricks, etc. G. A. Collins. 316. January 4.
Kilns for Burning Cement, etc. J. Foster. 324. January 4.
Composition for Treating Diseases of Vines, etc. J. Y. Johnson. 361. January 5.
Apparatus for Spraying Plants. J. Y. Johnson. 361. January 5.

Gazette Notices.

PARTNERSHIP DISSOLVED.

J. T. PRESTON, A. PRESTON, J. C. PRESTON, H. E. KING, and O. C. PRESTON, wholesale druggists, Bishopgate-street Without, E.C., and Duke-street, London, under the style of T. Hodgkinson's, Preston's, and King's.

IMPORTS OF CHEMICAL PRODUCTS

AT

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending January 5th.

Acetate of Lime—U. States, 807 pkgs. L. & I. D. Jt. Co.
Acetic Acid—Holland, 50 pkgs. A. & M. Zimmermann
" 250 Beresford & Co.
" 70 F. J. Putz & Co.
Acetone—Germany, 2 pkgs. H. Lorenz
Holland, 1 T. H. Lee
Acid Phosphates—U. States, 100 pkgs. Seawall Bros. Ltd.
Alkali—Germany, 200 c. Pillow, Jones, & Co.

Alum—Germany, 60 pkgs. [Ohlenschlager Bros.
Holland, 45 Ross & Deering
" 15 J. M. Steel & Co.
Belgium, 12 cks. R. W. Greeff & Co.
Aluminium—Belgium, £1,140 Major & Field
Anthracene—Holland, 245 pkgs. Burt, Boulton, & Co.
France, 58 "
Antimony Ore—France, 5 t. Vivian, Younger, & Co.
Natal, 10 Barrett, Tagant, & Co.
Sydney, 5 Harold Bros.
Queensland, 3 L. & I. D. Jt. Co.
Belgium, 57 Vivian, Younger, & Co.

Asbestos—U. States, £270 Deering & Robottom
Germany, 12 L. & I. D. Jt. Co.
Barytes—Holland, 3 cks. Burrell & Co.
Germany, 13 cks. H. Lambert
Holland, 43 Perkins & Homer
Bleaching Soda—Germany, 122 c. H. Lambert
Bog Ore—Holland, 100 t. Bale & Co.
Boracic Acid—Italy, 36 pkgs. City Coml. Wf. Ltd.
Germany, 4 L. & I. D. Jt. Co.
Caoutchouc—Zanzibar, 46 c. Forbes, Forbes, & Co.

Zanzibar, 283 c. L. & I.
E. Indies, 8 "
Madagascar, 197 "
" 279 "
Mauritius, 13 "
Germany, 150 W. M. Se
" 28 L. & I.
" 5 W
" 25 Anderson
Carbonic Acid Gas—Holland, 50 pkgs. Union
Castor Oil—Italy, 37 c. Stahl
France, 102 1/2 c. Bern
E. Indies, 198 c. Cap
Italy, 46 Rom
" 15 c. Harman, Hare

Caustic Potash—
Holland, 100 c. Beresford & Co.
" 127 J. M. Steel & Co.

Caustic Soda—
Holland, 5 cs. J. Barber & Co.

Chemicals (otherwise undescribed)
Germany, 4 pkgs. Hernu, Peron, & Co.

" 5 A. Willcox

" 5 T. Palmer

Holland, 32 J. Barber & Co.

" 25 Philipps & Graves

" 12 Burt, Boulton, & Co.

Germany, 3 pkgs. L. & I. D. Jt. Co.

Citric Acid—
France, 4 pkgs. B. & F. Wf. Co.

Cream of Tartar—
France, 5 pkgs. B. & F. Wf. Co.

" 40 A. Willcox

" 20 Finlay & Co.

" 5 W. C. Bacon & Co.

" 2 Sharland Bros.

" 10 C. F. Gerhardt

" 5 Ross & Deering

Dextrine—
Germany, 51 pkgs. M. D. Co.

" 25 Beck & Pollitzer

" 8 City Coml. Wf. Ld.

Holland, 10 H. Lorenz

Dyestuffs—
Annatto

Cochin, 2 pkgs. Hale & Son

France, 2 R. J. Fullwood & Co.

Argols

Italy, 330 pkgs. B. Jacob & Sons

Cochineal

Canaries, 4 pkgs. Sperling & Williams

" 25 W. M. Smith & Sons

" 31 Marshall & French

Cutch

E. Indies, 300 pkgs. Ross & Deering

Extracts

Canada, 300 pkgs. A. J. Humphrey

France, 20 Union L. Co.

U. States, 12 J. Browne & Son

France, 70 B. & F. Wf. Co.

Denmark, 4 M. D. Co.

France, 1 Prop. Hay's Wf.

Indigo

E. Indies, 18 chis. P. & O. Co.

" 46 W. Balchin

" 26 Darling Bros.

" 14 Stansbury & Co.

" 11 E. Bower & Co.

" 63 Park, Macfadyen, & Co.

" 5 T. Barlow & Bro.

" 9 J. Kenyon & Sons

" 36 L. & I. D. Jt. Co.

" 29 Ralli Bros.

" 13 J. Hatton Hall & Co.

" 9 Arbuthnot, Latham, & Co.

" 15 L. Acharn & Co.

" 8 Tingle, Jacobs, & Co.

" 8 De Clermont & Donner

Myrabolams

E. Indies, 1,335 pkgs. P. & O. Co.

" 683 J. Owen

Saffron

E. Turkey, 1 pkge. L. & I. D. Jt. Co.

Spain, 2 Richardson, Spence, & Co.

Shumac

Italy, 100 pkgs. J. Knill & Co.

" 300 Beresford & Co.

" 100 Hicks, Nash, & Co.

Gibraltar, 100 pkgs. M. De Levy & Sons

Tanner's Bark

Belgium, 15 t. Leach & Co.

" 1 Hicks, Nash & Co.

Natal, 17 Flack, Chandler & Co.

" 53 Boucher, Mortimore & Co.

Turmeric

E. Indies, 151 pkgs. Devitt & Hett

Valonia

E. Turkey, 65 t. Schloesser Bros.

Farina—

Holland, 60 pkgs. J. Barber & Co.

" 100 R. G. Hall & Co.

" 100 H. Lorenz

Glucose—

Germany, 600 pkgs. 600 c. Baxter & Hoare

France, 76 76 c. J. Barber & Co.

U. States, 1,000 1,000 G. Hedges & Son

" 470 1,000 L. Norman & Co.

" 500 500 Beck & Pollitzer

U. States, 2,376 2,624 L. Sutro & Co.

" 4,791 8,115 R. G. Hall & Co.

" 250 250 Barrett

" 175 490 Tagant & Co.

" 500 500 L. & I. D. Jt. Co.

" 100 600 Fellows,

" 100 600 Morton & Co.

" 500 500 Deering & Robottom

" 100 569 J. Barber & Co.

" 25 149 Fuert Bros.

" 50 263 H. Johnson & Sons

" 300 1,680 T. M. Duche & Sons

" 50 275 C. Southwell & Co.

" 375 2,062 Soundy & Sons

" 200 1,138 Pillow, Jones & Co.

Magnesia—

Holland, 10 pkgs. Beresford & Co.

Magnesium Carbonate—

Holland, 64 pkgs. Beresford & Co.

Manganese Ore—

Japan, 150 t. Macqueen Bros.

Manganese Oxide—

Germany, 2 pkgs. Spies Bros. & Co.

Maure—

E. Indies, 100 t. F. J. Cornwell, Son & Co.

" 250 A. Hunter & Co.

Germany, 10 Beresford & Co.

Aden, 9 Culverwell, Brooks & Co.

Methyl Alcohol—

Belgium, 10 dms. Lister & Biggs

U. States, 120 brls. J. Kertel

" 70 W. Pope & Co.

Mica—

E. Indies, 4655 W. M. Smith & Sons

Molasses—

U. States, 100 pkgs. 566 c. L. Sutro & Co.

Ochre—

Holland, 19 pkgs. Philipps & Graves

Oxalic Acid—

Holland, 15 pkgs. Beresford & Co.

Ozokerit—

Germany, 7 pkgs. Grosscurth, Luboldt & Co.

Paraffin Wax—

U. States, 430 pkgs. H. Hill & Sons

" 2,195 Anglo-Am. Oil Co.

" 100 Palmer & Co.

" 200 Prod. Brokers' Co.

Phosphate Rock—

Belgium, 225 t. Odams Chmcl Manure Co.

France, 133 D. de Pass & Co.

" 260 A. Hunter & Co.

Pitch—

Germany, 3 cks. T. H. Lee

Plumbago—

Ceylon, 269 brls. J. Thredder, Son & Co.

" 151 cks. L. & I. D. Jt. Co.

Germany, 11 Fellows, Morton & Co.

" 1 Beck & Pollitzer

" 3 cs. Drolenvaux & Bremner

Potassium Bicarbonate—

Holland, 40 c. A. & M. Zimmermann

Germany, 15 " "

Potassium Chloride—

Germany, 150 pkgs. F. W. Berk & Co.

" 300 W. G. Blagden

Potassium Frusiate—

Holland, 10 pkgs. F. Boehm

Potassium Silicate—

Holland, 25 pkgs. Spies Bros. & Co.

Pumice Stone—

Italy, 33 t. Un. Ltge. Co.

" 6 Acton & Borman

Pyrites—

Spain, 1,000 t. Naylor, Benzon & Co.

Quicksilver—

Italy, 500 brls. L. & I. D. Jt. Co.

" 100 flks. H. Bath & Son

Salammoniac—

Holland, 4 pkgs. Philipps & Graves

Salicylates—

Holland, 5 pkgs. J. Barber & Co.

Saltpetre—

E. Indies, 249 bgs. Ralli Bros.

" 1,576 Lucas & Spencer's Wf. Ld.

" 671 Ross & Deering

Germany, 57 cks. P. Hecker & Co.

" 25 Brown & Elmslie

Soda Ash—

Belgium, 3,763 c. R. Waters

Sodium Acetate—

France, 29 pkgs. S. F. Waters & Co.

Sodium Carbonate—

France, 80 c. F. J. Putz & Co.

Holland, 5 cks. J. Barber & Co.

Sodium Hyposulphite—

Holland, 16 pkgs. Beresford & Co.

Sodium Sulphate—

Holland, 25 pkgs. Beresford & Co.

Starch—

France, 5 pkgs. S. Potter

U. States, 110 Horne & Co.

" 174 C. Tennant, Sons, & Co.

Holland, 58 Philipps & Graves

Belgium, 56 T. H. Lee

Stearine—

Holland, 203 bls. Palmer & Co.

Belgium, 24 bgs. H. Hill & Sons

Sulphur—

Italy, 10 t. G. Boor & Co.

" 10 C. J. Capes & Co.

" 3 McDougall & Bonthron

" 15 F. C. Devon & Co.

Talc—

Italy, 4,180 London A-bestos Co.

Tallow and Stearine—

Belgium, 6 cks. Fuert Bros.

Sydney, 100 L. & I. D. Co.

Tartaric Acid—

Holland, 35 pkgs. B. & F. Wf. Co.

Turpentine—

N. Russia, 104 brls. C. B. Leighton

Ultramarine—

Belgium, 2 cks. Leach & Co.

" 20 H. Koonstamm

France, 11 C. J. Langmead

Germany, 24 Steinhoff, Sons, & Co.

Holland, 7 pkgs. Haefner, Hilpert & Co.

" 4 W. Harrison & Co.

" 37 G. Rahn & Co.

" 4 cks. Philipps & Graves

Varnish—

U. States, 25 pkgs. Beck & Pollitzer

Belgium, 6 Magee, Taylor & Co.

France, 12 Fiageolet & Co.

Verdigris—

France, 1 pkge. B. & F. Wf. Co.

White Lead—

Holland, 22 cks. Burrell & Co.

Germany, 1 H. Lambert

" 66 M. Ashby, Ld.

" 19 N. J. Fenner & Co.

" 22 Magee, Taylor & Co.

Belgium, 19 Perkins & Homer

Wolfam Ore—

Sydney, 12 t. H. Bath & Son

Wood Pulp—

Germany, 273 pkgs. T. H. Lee

" 103 O. Herlich

N. Russia, 114 Thames S. T. & L. Co., Ld.

Sweden, 240 G. F. Green & Co.

" 200 Henderson, Craig, & Co.

Holland, 83 G. F. Green & Co.

" 520 Horton, Kirby & Co.

" 81 W. Balchin

" 81 C. S. Lovell

Sweden, 80 W. G. Taylor & Co.

" 203 Becker & Ulrich

Germany, 107 E. J. & W. Goldsmith

" 1,016 E. J. & W. Goldsmith

Canada, 14 166 pks. E. J. & W. Goldsmith

Holland, 1,818 pkgs. E. J. & W. Goldsmith

Zinc Oxide—

Treacle—	
New York,	600 brls.
Bordeaux,	3 cs.
Ultramarine—	
Rotterdam,	10 cks.
Hamburg,	4
Verdigris—	
Bordeaux,	2 cks.
Waste Salt—	
Hamburg,	430 t. 400 bgs.
Wood Pulp—	
Skien,	8,192 bls.
Oporto,	1,000 Calma Wood Pulp Co.
Zinc Ashes—	
Rotterdam,	77 cks.
Zinc Oxide—	
Antwerp,	15 brls.
New York,	30
Zinc Skimmings—	
New York,	7 cks.

MANCHESTER.*Week ending January 5th.*

Acetic Acid—	
Rotterdam,	75 blns.
Albumen—	
Hamburg,	17 cks.
Barytes—	
Antwerp,	50 bgs.
Chemicals (otherwise undescribed)	
Rotterdam,	4 bgs. Simpson, Howden, & Co.
Chrome Alum—	
Rotterdam,	6 cks. Simpson, Howden, & Co.
Colours—	
Hamburg,	4 cks.
Rotterdam,	2
Antwerp,	80 8 cs.
Rotterdam,	15 42 bks. 35 brls. Simpson, Howden, & Co.
Dextrine—	
Stettin,	150 bgs.
Dyestuffs—	
Alizarine	
Rotterdam,	33 cks.
Farina—	
Hamburg,	30 bgs.
Rotterdam,	500
Stettin,	203
Glucose—	
Stettin,	1,000 bgs.
Limestone—	
Antwerp,	2 cs.
Litharge—	
Rotterdam,	42 cks.
Mica—	
Hamburg,	1 cs.
Pitch—	
Rotterdam,	27 cks. Simpson, Howden, & Co.
Potash—	
Hamburg,	36 cks.
Soap—	
Rotterdam,	2 cs. Simpson, Howden, & Co.
Sodium Prussiate—	
Rotterdam,	50 cks.
"	13 Simpson, Howden, & Co.
Starch—	
Hamburg,	224 cs.
Rotterdam,	40
"	20 Simpson, Howden, & Co.
Antwerp,	80
Sulphur—	
Antwerp,	78 cks.
Tartaric Acid—	
Rotterdam,	40 cks. 4 brls. Simpson, Howden, & Co.
Ultramarine—	
Hamburg,	16 cks.
Wood Pulp—	
Gothenburg,	3,368 bls. 5 bgs.
Christiania,	34 Heenmune & Co.
Wood Spirit—	
Hamburg,	4 dms.

HULL.*Week ending January 5th.*

Acetate—	
New York,	468 bgs. Wilson, Sons, & Co., Ltd.
Alum—	
Rotterdam,	74 cks. W. & C. L. Ringrose
Aniline—	
Hamburg,	10 cks.
Rotterdam,	1 W. & C. L. Ringrose
Aniline Colours—	
Amsterdam,	1 kg. W. & C. L. Ringrose
Barytes—	
Rotterdam,	92 cks. W. & C. L. Ringrose
Riga,	365 Wilson, Sons, & Co., Ltd.
Rotterdam,	12 Hutchinson & Son
Chemicals (otherwise undescribed)	
Dunkirk,	28 pks. Wilson, Sons, & Co., Ltd.
Stettin,	57 brls. "
Antwerp,	8 dms. "
Dunkirk,	62 pks. "
Hamburg,	14 cks. "
Cod Oil—	
Christiania,	3 brls. Wilson, Sons, & Co., Ltd.
Colours—	
Hamburg,	5 cs. Wilson, Sons, & Co., Ltd.
Danzig,	5 brls. "
Antwerp,	21 cks. "
Rotterdam,	4 cs. 20 77 pks. 12 brls. 1 bx. Hutchinson & Son
"	15 57 cks. 16 pks. W. & C. L. Ringrose
Cryolite—	
Copenhagen,	1 ck. Wilson, Sons, & Co., Ltd.
Dyestuffs—	
Alizarine	
Rotterdam,	50 brls. 18 pks. Hutchinson & Son
"	34 cks. W. & C. L. Ringrose
Farina—	
Stettin,	106 bgs. Wilson, Sons, & Co., Ltd.
Harlingen,	400
Ghent,	172 cs. Wilson, Sons, & Co., Ltd.
Glucose—	
Rotterdam,	700 bgs. Hutchinson & Son
"	20
Kaolin—	
Rotterdam,	20 bgs. Reckitt & Sons
"	122
Ozokerit—	
Stettin,	132 bgs. Wilson, Sons, & Co., Ltd.
Paint—	
Dunkirk,	1 ck. Wilson, Sons, & Co., Ltd.
Phosphate—	
Ghent,	500 bgs. Wilson, Sons, & Co., Ltd.
Pitch—	
Boston,	5 brls. Wilson, Sons, & Co., Ltd.
Antwerp,	14 cks. W. & C. L. Ringrose
Rotterdam,	1
Potash—	
Bremen,	1 ck. Veltmann & Co.
Soap—	
Riga,	12 cs. Wilson, Sons, & Co., Ltd.
Soda—	
Rotterdam,	6 cks. W. & C. L. Ringrose
Starch—	
Bremen,	998 cs. Veltmann & Co.
Rotterdam,	120 Hutchinson & Son
Stearine—	
Antwerp,	107 pks. Wilson, Sons, & Co., Ltd.
Tallow—	
Boston,	10 brls. Wilson, Sons, & Co., Ltd.
Tartar—	
Bordeaux,	2 cks.

Treacle—	
New York,	775 brls. Wilson, Sons, & Co., Ltd.
"	100
Boston,	764 Wilson, Sons, & Co., Ltd.
Ultramarine—	
Rotterdam,	4 cks. W. & C. L. Ringrose
Bremen,	64
Varnish—	
New York,	20 brls. Wilson, Sons, & Co., Ltd.
Waste Salt—	
Hamburg,	491 bgs. Furley & Co.
White Lead—	
Rotterdam,	60 cks. Hutchinson & Son
"	20 W. & C. L. Ringrose
Wood Pulp—	
Halmstad,	1,979 bls.
Hango,	1 cs. 200 10 pcls. Furley & Co.
Zinc Oxide—	
Rotterdam,	25 cks. Hutchinson & Son

GLASGOW.*Week ending January 10th.*

Acetic Acid—	
Rotterdam,	15 cks. J. Rankine & Son
Acetite—	
Rotterdam,	4 cks. J. Rankine & Son
Alum—	
Hamburg,	160 cks.
Aniline Colours—	
Rotterdam,	12 cks. J. Rankine & Son
Aniline Salt—	
Rotterdam,	8 cks. J. Rankine & Son
Barium Chloride—	
Rotterdam,	6 cks. J. Rankine & Son
Barytes—	
Rotterdam,	92 pkgs. 248
Bone Meal—	
Bombay,	2,000 bgs.
Carbonic Acid—	
Rotterdam,	15 tubes J. Rankine & Son
Castor Oil—	
Marseilles,	275 brls. 8 cs.
Cellulose—	
Hamburg,	996 bls.
Chemicals (otherwise undescribed)	
Rotterdam,	9 dms. 7 brls. J. Rankine & Son
Hamburg,	10 cs.
Colours—	
Rotterdam,	35 pkgs.
Hamburg,	1 cs. 16 cks.
Rotterdam,	1 J. Rankine & Son
Dyestuffs—	
Alizarine	
Rotterdam,	133 pkgs. 23 cks. 2 cs.
Extracts	
Rouen,	25 cks.
Farina—	
Hamburg,	1,000 bgs.
Kelp—	
Bergen,	157 bgs.
Paint—	
Christiania,	1 cs.
Pitch—	
Marseilles,	30 brls.
Potash—	
Rotterdam,	70 cks. J. Rankine & Son
"	20
Saltpetre—	
Hamburg,	100 kgs. 50 bgs.
Soap—	
Marseilles,	100 bxs.
Soda Ash—	
Rouen,	13 cks.
Sodium Acetate—	
Rouen,	14 cks.
Starch—	
Amsterdam,	25 bgs.

Stearine—	
Amsterdam,	62 bgs.
Treacle—	
Rotterdam,	12 cks. J. R.
Ultramarine—	
Rotterdam,	1 cs. J. R.
Waste Salt—	
Hamburg,	610 bgs.
White Lead—	
Rotterdam,	27 cks. 96 J. Rankine
Wood Pulp—	
Christiania,	2,866 bls. 80
Zinc Oxide—	
Rotterdam,	25 cks. J. R.
Zinc Sulphate—	
Hamburg,	20 cks.
Zinc White—	
Rotterdam,	100 cks. J. R.

TYNE.*Week ending January 5th.*

Alum Earth—	
Hamburg,	36 cks. Tyne S.
Colours—	
Antwerp,	16 brls. Tyne S.
Rotterdam,	2 Tyne S.
Stearine—	
New York,	10 brls. B. J. Suth
Rotterdam,	5 bls. Tyne S.
Varnish—	
Antwerp,	6 brls. Tyne S.
New York,	31 B. J. Suth
White Lead—	
Antwerp,	4 cks. Tyne S.
Zinc Oxide—	
Antwerp,	25 brls. Tyne S.
Zinc Sulphate—	
Hamburg,	12 cks. Tyne S.

GOOLE.*Week ending January 20th.*

Alum—	
Rotterdam,	40 bgs.
Antimony—	
Boulogne,	8 cks. 3 cs.
Dyestuffs (otherwise undescribed)	
Rotterdam,	83 pkgs.
Boulogne,	3 cs. 9 cks.
Dyestuffs—	
Alizarine	
Rotterdam,	23 brls.
Logwood	
Belize,	1,458 t.
Farina—	
Hamburg,	200 bgs.
Glucose—	
Hamburg,	26 cks.
Phosphate—	
Ghent,	1,500 bgs.
Pyrites—	
Huelva,	737 t.
Saltpetre—	
Antwerp,	71 bgs.
Sodium Silicate—	
Rotterdam,	1 ck.
Tartaric Acid—	
Rotterdam,	2 cks.
Waste Salt—	
Hamburg,	474 cks.

GRIMSBY.*Week ending January 5th.*

Aniline Dyes—	
Hamburg,	43 pkgs.
Antwerp,	20 26 cs. 2 ds.
Caoutchouc—	
Antwerp,	2 cs.
Hamburg,	14 bgs.
Chemicals (otherwise undescribed)	
Hamburg,	1 cs.
Colours—	
Hamburg,	10 pkgs. 12 cks.
Rotterdam,	20 bgs.
Antwerp,	7 4 cks.

Yokohama, 7 bbls.

124	1 cs.	1 brl.
125	5	8 dms.
126	4	
127	50	
128	1	
129	1	
130	19	
131	4	7
132	5	bls.
133	11 c.	
134	6 kgs.	
135	192	
136	50 brls.	
137	1 l.	13 c.
138	6	12

CHESTER.

ending January 10th.

139	21 cks.
140	Salts—
141	2 cks.
142	um Carbonate—
143	4 cks.
144	um Sulphate—
145	748 bgs.
146	527
147	Oil—
148	24 dms.
149	Salts—
150	1 cs. 12 cks.
151	ene—
152	43 cks.
153	y Sulphate—
154	3 bls.
155	g Powder—
156	60 brls.
157	Acid—
158	40 cks.
159	Colours—
160	2 kgs.
161	Scale—
162	19 cks.
163	Wax—
164	40 bgs.
165	19
166	195 l.
167	95
168	Bicarbonate—
169	50 kgs.

HULL.

ending January 5th.

170	35 cks.
171	3
172	35 dms.
173	um Sulphate—
174	573 bgs.
175	250
176	40 bgs.
177	7 drs. 150 cks.
178	g Powder—
179	200 cks.
180	75
181	75
182	89
183	1 ck.
184	Soda—
185	50 dms.
186	la (otherwise undescribed)
187	1 cs. 8 cks. 20 pkgs.
188	26
189	40
190	152
191	4
192	3 dms.
193	30
194	15
195	55 pkgs.
196	5
197	175
198	10
199	4
200	1 dm.
201	8
202	29
203	46
204	3
205	14 pks.

Reval,	26 cks.
Stettin,	18
Cottonseed Oil—	
Antwerp,	306 c.
Alexandria,	365
Bremen,	40
Copenhagen,	199
Hamburg,	1,107
Konigsberg,	51
Leghorn,	100
Marseilles,	104
Naples,	100
Rotterdam,	2,943
Dyestuffs (otherwise undescribed)	
Antwerp,	2 cks.
Boston,	8
Danzig,	1
New York,	15
Riga,	8
20 cs.	
2 bls.	
Linseed Oil—	
Bremen,	172 c.
Christiania,	63
Copenhagen,	34
Hamburg,	550
Manure—	
Bordeaux,	16 t.
Rouen,	5
Mineral White—	
Amsterdam,	200 bgs.
Rotterdam,	200
Stettin,	1 t.
Painters' Colours—	
Amsterdam,	1 cs. 12 cks.
Antwerp,	193 pkgs.
Bordeaux,	1
Boston,	1
Dunkirk,	16
Gothenburg,	1
Genoa,	1
Hamburg,	9
Leghorn,	10
Marseilles,	15
Naples,	2
Rotterdam,	14
Rouen,	10
Reval,	1
Stettin,	9
Paraffin Wax—	
Riga,	100 bgs.
Pitch—	
Antwerp,	113 t.
Dunkirk,	86
Soda Crystals—	
Leghorn,	13 cks.
Tallow—	
Gothenburg,	5 cks.
Rotterdam,	68
Tar—	
Amsterdam,	8 cks.
Danzig,	1
Marseilles,	160
Rotterdam,	3
Varnish—	
Amsterdam,	1 ck.
Copenhagen,	1 cs.
Danzig,	1
Genoa,	1
Hamburg,	1
Naples,	1
Reval,	1
Whiting—	
Antwerp,	20 cks.

GLASGOW.

Week ending January 10th.

Ammonia—	
Manila,	10 cs.
Ammonium Sulphate—	
U.S.A.,	50 t. 15 c.
Hamburg,	126
Trinidad,	100 bgs.
Demerara,	265
Italy,	518
Coal Products—	
Naphtha	
Rouen,	36 brls.
Pitch	
Bombay,	97 brls.
U.S.A.,	188 t. 12 c.
Antwerp,	100 rnlts.
Calcutta,	443 t. 9 c.
Spain,	1,797
Bombay,	100cks.
Italy,	4
Tar	
U.S.A.,	1 ck.
Christiania,	250 brls. 51 cks. 30 rnlts.
Calcutta,	100
Karachi,	100
Madras,	240
Bombay,	7 t. 2 3/4 c. 240

Coal Tar Products (otherwise un-

described)—

Rotterdam,	23 t.
Copper Sulphate—	
Bordeaux,	11 cks.
Dried Blood—	
Rouen,	135 bgs.
Farina—	
Antwerp,	20 bgs.
Glucose—	
New York,	1,098 glns.
Linseed Oil—	
Demerara,	4 t. 5 1/2 c.
Messina,	2
Litharge—	
Antwerp,	9 cks.
Magnesium Sulphate—	
Paris,	25 bgs.
Christiania,	2 t. 10 c.
Manganese—	
Basle,	11 cks.
Manure—	
Demerara,	270 bgs.
Nitrate of Lead—	
Italy,	10 cks.
Paint—	
Alexandria,	1 t. 17 c.
Manila,	750 kgs. 30 dms.
Painters' Colours—	
Bombay,	2 cs.
Brisbane,	1 t. 1 c.
Tantah,	1 t. 1 c.
Paraffin Wax—	
Antwerp,	51 t. 9 cs.
Bordeaux,	37
Rouen,	5 t.
Turkey,	14
Alexandria,	1
Genoa,	60 bgs.
Italy,	264
Leghorn,	160
Potassium Bichromate—	
Rouen,	19 t. 1 1/4 c.
Salt—	
Saigon,	50 cs.
Slag—	
Rotterdam,	544 t.
Soap—	
Trinidad,	260 bxs.
Demerara,	150
Sodium Bichromate—	
Rouen,	21 t. 4 3/4 c.
Sodium Nitrate—	
Demerara,	125 bgs.
Sodium Phosphate—	
U.S.A.,	5 t. 16 c.
Sulphuric Acid—	
Madras,	100 hf.-cs.
M. Video,	10 cs. 20 cbys.
Trinidad,	50
Bombay,	1,947
Manila,	30
Treacle—	
Christiania,	8 t. 1 c.
Turpentine—	
Philippine Is.,	100 dms.
Varnish—	
Brisbane,	1 dm.
White Lead—	
Brisbane,	400 dms. 60 cks.
Colombo,	100

TYNE.

Week ending January 5th.

Alkali—	
Antwerp,	10 t. 14 c.
Amsterdam,	6
Drontheim,	1
Venice,	10
Savona,	85
Ammonium Carbonate—	
Odessa,	4 t.
Ammonium Chloride—	
Barcelona,	3 t. 12 c.
Ammonium Sulphate—	
Hamburg,	29 t.
Antimony—	
Hamburg,	5 t.
Rotterdam,	1
Barium—	
Rouen,	19 t. 12 c.
Barytes—	
Rouen,	25 t. 5 c.

Bleaching Powder—

Antwerp,	44 t. 1 c.
Hamburg,	22
Amsterdam,	14
Christiania,	1
Reval,	60
Rouen,	15
Rotterdam,	9
Drontheim,	10
Venice,	14
Copenhagen,	2
Caustic Soda—	
Barcelona,	29 t. 10 c.
Antwerp,	10
Hamburg,	3
Amsterdam,	5
Venice,	32
Seville,	60
Copenhagen,	2
Litharge—	
Hamburg,	1 t. 7 c.
Amsterdam,	4
Rotterdam,	1
Magnesia—	
Barcelona,	4 t.
Hamburg,	1 c.
Smyrna,	5
Manure—	
Savona,	200 t. 1 c.
Oxalic Acid—	
Barcelona,	11 t. 2 c.
Paint—	
Hamburg,	1 t. 8 c.
Rouen,	2
Trieste,	2
Phosphorus—	
Seville,	1 t. 4 c.
Salt—	
Copenhagen,	10 c.
Slag—	
Rotterdam,	199 t.
Soda—	
Antwerp,	5 t. 4 c.
Smyrna,	33
Christiania,	5
Rotterdam,	19
Venice,	25
Savona,	19
Drontheim,	24
Soda Ash—	
Hamburg,	2 t.
Gothenburg,	13
Drontheim,	3
Venice,	40
Odessa,	13
Sodium Silicate—	
Odessa,	30 t. 16 c.
Sodium Sulphate—	
Porsgrund,	250 t.
Drontheim,	248
Superphosphate—	
Cherbourg,	190 t. 2 c.
Tar—	
Hamburg,	17 c.

GOOLE.

Week ending January 2nd.

Chemicals (otherwise undescribed)	
Rotterdam,	51 cks.
Coal Products (otherwise undescribed)	
Boulogne,	4 cks. 63 pkgs.
Ghent,	1
Hamburg,	2
Rotterdam,	43
Dyestuffs (otherwise undescribed)	
Ghent,	1 cs.
Hamburg,	54 cks.
Manure—	
Boulogne,	194 bgs.
Hamburg,	400
Painters' Colours—	
Antwerp,	5 tins.
Rotterdam,	2 cks. 34 pkgs.
Pitch—	
Antwerp,	711 t.
Dunkirk,	76
Rotterdam,	103

GRIMSBY.

Week ending January 5th.

Chemicals (otherwise undescribed)	
Antwerp,	14 pkgs.
Hamburg,	2 cs.
Painters' Colours—	
Hamburg,	1 dm.

PRICES CURRENT.

WEDNESDAY, JAN

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities

Acids:—

	£	s.	d.
Acetic, 25 % and 40 %	per cwt.	7/-	& 10/6
Glacial		50/-	
Arsenic S.G., 2000°		0 15 0	
Fluoric	per lb.	0 0 3 1/4	
Muriatic (Tower Salts), 30° Tw.	per bottle	0 0 10	
(Cylinder), 30° Tw.		0 3 0	
Nitric 80° Tw.	per lb.	0 0 1 3/4	
Nitrous		0 0 1 3/4	
Oxalic	nett	0 0 3 3/4	
Phosphoric, 1750°		0 0 11	
Picric		0 1 0	
Sulphuric (fuming 50 %	per ton	15 10 0	
(monohydrate)		5 10 0	
(Pyrites, 168°)		3 0 0	
(free from arsenic, 145°)		1 5 0	
Sulphurous (solution) S.G. 1025		1 6 0	
Tannic (pure)	per lb.	0 1 0	
Tartaric		0 0 11	
Arsenic, white powdered	nett per ton	14 7 6	
Alum (loose lump)		4 17 6	
Alumina Sulphate (pure)		4 17 6	
Aluminoferrous		2 7 6	
Aluminium	per lb.	0 3 0	
Ammonia, Anhydrous		0 1 4	
" 880=28° B.	per lb.	0 0 3	
" =24° B.		0 0 2 1/4	
Carbonate	nett	0 0 3 3/4	
Muriate	per ton	23 10 0	
(sal-ammoniac) 1st & 2nd	per cwt.	39/- & 37/-	
Nitrate	per ton	41 0 0	
Phosphate	per lb.	0 0 10 3/4	
Sulphate (grey) London	per ton	11 0 0	
(grey) Hull		10 17 6	
Aniline Oil (pure)	per lb.	0 0 5 1/4	
Aniline Salt		0 0 4 1/4	
Antimony	per ton	32 10 0	
(tartar emetic)	per lb.	0 0 9 1/4	
(golden sulphide)		0 0 10	
Barium Chloride	per ton	6 10 0	
Carbonate (native)		3 5 0	
Sulphate (native levigated)		45/- to 75/-	
Bleaching Powder, 35 %	nett	7 5 0	
Liquor, 7 %		3 10 0	
Bisulphide of Carbon		11 5 0	
Chromium Acetate (crystal)	per lb.	0 0 6	
Calcium Chloride	per ton	2 2 6	
China Clay (at Runcorn) in bulk		17/6 to 30/-	

Coal Tar Products and Dyes:—

Alizarine (artificial) 20 %	net per lb.	0 0 8
Magenta		0 3 9
Anthracene, 30 % A, f.o.b. London	per unit per cwt.	0 1 1
Benzol, 90 % nominal	per gallon	0 1 0
50/90		0 1 1
Carbolic Acid (crystallised 40°)	per lb.	0 0 5 1/4
(crude 60°)	per gallon	0 1 9
Creosote (ordinary)		0 0 2
(filtered for Lucigen light)		0 0 2
Crude Naphtha 30 % @ 120° C.		0 0 5
Grease Oils, 22° Tw.	per ton	2 10 0
Pitch, f.o.b. Liverpool or Garston		1 13 0
Solvent Naphtha, 90 % at 160°	per gallon	0 1 2 1/2
Lucigen and "Wells" Oils		0 0 2 1/2
Copper	per ton	40 15 0
Sulphate		15 10 0
Oxide (copper scales)		39 0 0
Glycerine (crude)		15 0 0
(distilled S.G. 1250°)		40 0 0
Iodine	nett, per oz.	0 0 9
Iron Sulphate (copperas)	per ton	1 5 0
Sulphide (antimony slag)		2 0 0
Lead (sheet) for cash		10 17 6
Litharge Flake (ex ship)		13 10 0
Acetate (white)		24 15 0
brown		15 10 0
Carbonat: (white lead) pure		16 0 0
Nitrate		20 0 0

Lime, Acetate (brown)	per c	
(grey)		
Magnesium (ribbon and wire)	per t	
Chloride (ex ship)	per t	
Carbonate	per cw	
Hydrate	per to	
Sulphate (Epsom Salts)	per t	
Manganese, Sulphate		
Borate	per cw	
Ore, 70 %	per to	
Methylated Spirit, 61° O.F.	per galle	
Naphtha (Wood), Solvent		
Miscible, 60° O.F.		
Oils:—		
Cotton-seed	per c	
Linseed		
Petroleum, American	per galle	
Stearine	per t	
Phosphorus (yellow)	per lb	
(red)		
Potassium (metal)	per o	
Bichromate	nett	per lb
Carbonate, 90% (ex ship)	per to	
Chlorate	per lb	
Cyanide, 98%		
Hydrate (Caustic Potash) 80/85 %	per tm	
(Caustic Potash) 75/80 %		
(Caustic Potash) 70/75 %		
Nitrate (refined)	per cwt	
Permanganate	per cwt	
Prussiate Yellow	per lb	
Sulphate, 90 % (ex ship)	per to	
Muriate, 80 % (do.)		
Silver (metal)	per oz	
Nitrate		
Sodium (metal)	per lb	
Carb. (refined Soda-ash) 48 %	nett per ton	
(Caustic Soda-ash) 48 %		
(Carb. Soda-ash) 48 %		
(Alkali) 58 %		
(Soda Crystals)		
Acetate (ex-ship)		
Arseniate, 45 %		
Chlorate	per lb	
Borate (Borax)	net, per ton	
Bichromate	per lb	
Hydrate (77 % Caustic Soda) (f.o.b.) net per ton		
(74 % Caustic Soda)		
(70 % Caustic Soda)		
(60 % Caustic Soda)		
(60 % Caustic Soda, cream) (f.o.b.)	10 ton lot	
Bicarbonate		
Hyposulphite		
Manganate, 30%		
Nitrate (95 %) ex-ship Liverpool	per cwt.	
Nitrite, 98 %	per ton	
Phosphate		
Silicate (glass)	per ton	
(liquid, 100° Tw.)		
Stannate, 40 %	per cwt.	
Sulphate (Salt-cake)	per ton	
(Glauber's Salts)		
Sulphide		
Sulphite		
Strontium Hydrate, 100%		
Sulphocyanide Ammonium, 95 %	per lb.	
Barium, 95 %		
Potassium		
Sulphur (Flowers)	per ton	
(Roll Brimstone)		
Brimstone: Best Quality		
Superphosphate of Lime (26%)		
Tallow		
Tin Crystals	per lb.	
English Ingots	per ton	
Zinc (Spelter)		
Chloride (solution, 100° Tw.)		

THE CHEMICAL TRADE JOURNAL

AND
OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

401.

SATURDAY, JANUARY 26, 1895.

Vol. XVI.

Contents.

PAGE	PAGE
65	Tar and Ammonia Products
66	Tyne Chemical Report
67	Report on Manure Material
68	The Metal Market
69	The Copper Market
69	Miscellaneous Chemical Market ..
70	Hull Paint, Oil, and Colour Report ..
70	Liverpool Oil and Colour Market ..
70	West of Scotland Chemicals
71	New Companies
71	The Patent List
71	Gazette Notices
71	Imports
71	Exports
72	Prices Current

ADVERTISEMENT.

SALE (used as Gasholders)—Two Stout Oak S (size 52 in. by 60 in.), with Galvanized Sheet Iron Bells in two pieces (size 59 in.) Cost £40., price £12. the two.—Address, P., care of G. Barth, street, London, W.

Notices.

Communications for the *Chemical Trade Journal* should be sent to the Editor, and Cheques and Post Office Orders made payable to—**18 BROS., 32, Blackfriars Street, MANCHESTER.**

Our Registered Telegraphic Address is—

"Expert, Manchester."

Terms of Subscription, commencing at any date, to the *Trade Journal*,—payable in advance,—including postage to all parts of the world, are as follows:—

Half-yearly (52 numbers) 12s. 6d.

Quarterly (26 numbers) 6s. 6d.

Monthly (13 numbers) 3s. 6d.

Communications for the Editor, if intended for insertion in the next issue, should reach the office not later than **Tuesday** evening.

Reports, and correspondence on all matters of interest to the chemical and allied industries, home and foreign, are solicited. Contributors should condense their matter as much as possible, and give the name and address of the author on the side only of the paper, and in all cases give their names and addresses, not necessarily for publication. Sketches should be sent on separate sheets.

Advertisements.

Advertisements of Situations Vacant, Premises on Sale or To be Let, and Specific Articles for Sale by Private Contract are accepted in the *Chemical Trade Journal* at the following rates:—

30 Words and under 2s. 6d. per insertion
Each additional 10 words 6d.

Advertisements, Announcements in the Directory Columns, and all Advertisements prepaid, are charged at the Tariff rates, which will be forwarded on request.

Advertisements intended for insertion in the current week's issue should reach the office by **Wednesday morning** at the latest.

CURRENT TOPICS.

THE PROPOSED SOLID PARAFFIN COMBINE.

DURING this week all kinds of reports have been circulating in the daily press about the Combination of the American and Scotch Oil Companies. Some have been confined to the consideration of a combine in solid paraffin, others stated that the Standard Oil Company had agreed not to send any more American oil into Scotland.

Altogether the reports show how very much at sea the "dailies" are in matters technical. Even the Scotch papers do not seem to know what has really been going on, for it was some days before even one of the most influential organs gave voice to anything like the true state of affairs, and then only in an obscure reference to Stock Exchange dealings.

The actual facts on which the various misleading "pars" have been based appear to be that the representative of the Standard Oil Company of America has approached the Scotch Oil Companies as to the feasibility of resuscitating the old agreement for the control of solid paraffin which fell through about three years ago.

It is perfectly true that the price of solid paraffin fell £12. per ton owing to the collapse of the old agreement, and there is equal verity in the statement that the present proposed increase in price of one farthing per pound will mean an annual addition of some £15,000. to the revenue of the Scotch Oil Companies if a ratification of the old arrangement can be effected without raising the animosity of consumers. But as the immortal bard of Avon has pointed out, "there is a lot of virtue in it."

It should be remembered that the reason why the original agreement had to be abandoned three years back was because the chief consumers, namely, the British candle makers, took action amongst themselves so successfully, that it became impossible to maintain the price of solid paraffin any longer.

Supposing everything is amicably arranged between the Scotch and American producers, even then all will depend upon whether candle makers can be persuaded to look at things in a philanthropic light. They may consent to pay higher prices for raw material because the paraffin industry is in a bad way, and they may not.

Competition is as keen in the candle trade now as it was three years since, when the trade waged war against the combine, and it is not very likely, after fighting its way to its present position, and duly fortifying itself, that it will voluntarily play the abdicant.

By all accounts prices are not too remunerative in the candle trade, so that an immediate advance in price is sure to be unwelcome, and particularly so when it is accompanied by the reconstitution of a combination which has proved a thorn in the flesh in times past.

It is not through any feeling of hostility to the Scotch oil industry that we have pointed out all these difficulties. No one, we should think, could wish anything but good to an industry which has met with such reverses as the Scotch oil industry has experienced during the past few years. It is rather because we think more harm than good is likely to result from the spread of the belief that the proposed combine will achieve the salvation of this industry as if by magic.

We therefore again emphasise the fact that the statement made in many of the "dailies" to the effect that "the final arrangements are to be made in London," is pregnant with more than appears on the surface.

GOVERNMENT RULES FOR MANURE WORKS.

The singular fatality through blood-poisoning at a manure works, reported in our columns this week, is likely to bring down upon animal manure works the close attention of Government inspectors, as well as the burden of a special code of rules.

Taking all things into consideration, it is not very surprising to learn of such an accident happening. In handling material in the condition in which it exists at many works, there must be considerable risk of contracting blood-poisoning.

On the other hand, due weight should be attached to the fact that such cases appear to have been very rare, so that little blame could attach to the firm whose employee was victimised.

It is strange that those who were so active last year in exposing the "horrors" of the chemical and other trades did not discover this danger. The fact that manure works do not come under the Act which controls other occupations, shows that they missed a chance of distinguishing themselves.

There are not many diseases which can be contracted in chemical works by inoculation, but we could descant for a long while on the "dangers" which must beset workers in the manure trade. It certainly is difficult to exist without ever contracting, either on or off the works, a slight scratch or cut, after which the risk of handling the wool and skins of animals which have died from anthrax must be considerable. The jury wisely left the question of the desirability of framing rules to the Government inspectors, and so did not commit themselves to anything. There is little doubt, however, that after what has taken place, manure works will be hearing more about the matter from official quarters, and it must be admitted that it is hard to see on what grounds reasonable regulations for the provision of proper washing accommodation and such like could be objected to.

PERPETUATION OF THE TAR PRODUCTS SALES COMMITTEE.

Although apparently the success which attended the efforts of this committee last year was decidedly limited, seeing that benzol fell from 1s. 5½d. to 1s. 0½d. during 1894, the members of the committee do not seem altogether disheartened. For the third consecutive year this committee has been registered as a limited company. The capital this year is somewhat less than in 1894, being £95,000, instead of £105,000. With this exception there is no very great change in its constitution.

The first directors are to be Messrs. Burt, Boulton, and Haywood; Messrs. Forbes, Abbott, and Lennard; Robinson Bros., Ltd.; Stainsby and Lyon, Ltd.; Sadler and Co., Ltd.; Hardman and Holden, Ltd.; Bird and Son; and Alex. Forrest.

Though benzol has continued to fall, it does not follow that the committee did not achieve some good, for had it not existed there is no saying whether one shilling would have proved the bottom price for 1894 or not. At the same time

anthracene, at all events, has stood still. We hope the next year will prove a better one for tar products. It tainly should take very little to show an advance on year.

THE SALFORD RIVER POLLUTION CASE.

A N action by the Mersey and Irwell Joint Committee against Salford Corporation for pouring sewage matter into the stream within their district and into the Ship Canal, began on Thursday, inst., in the Salford County Court, before His Honour Judge Mr. Sutton and Mr. Bradbury were counsel for the Joint Committee and Mr. Bidder, Q. C., and Mr. Roe Rycroft appeared for the Corporation. Several Salford aldermen and councillors were present in Court, including Alderman Walmsley and Councillor Groves, the chairman and deputy-chairman of the River Conservancy Committee of the Corporation. Mr. Bidder, at the beginning of the hearing, took preliminary objection, his contention being that the Joint Committee were not in order in instituting the proceedings. After a long argument by counsel, the Judge overruled the objection, and Mr. Sutton proceeded at considerable length to open the case. The Joint Committee's case was that the Salford Corporation, though at one time disposed to do everything possible in the way of purifying the effluent from the sewage works at Mode Wheel, now occupied a very backward position in the matter. It was stated that they were only the process of precipitation by lime, which is regarded as an inefficient system unless accompanied by filtration.

Mr. Thomas Jephson and Mr. Arthur Gillespie, sub-inspectors employed by the Joint Committee, were the first witnesses called. They testified to having taken various samples of the effluent from Salford sewage works.

Mr. R. A. Tatton, chief inspector to the Joint Committee, stated that the samples of the sewage brought into his offices had become putrid after a few days. He had often visited the outfall of Salford sewage works, and never on any occasion found the effluent to be passable. A scum was observable on the canal water where outfall entered, and there was a strong smell. The water of the canal now backed up the culvert through which the effluent came, so that the effluent joined beneath the surface of the canal water. He had a good deal of experience of the effect on sewage of lime precipitation only, but had invariably found it unsatisfactory unless accompanied by filtration. There was room enough at Salford for the erection of artificial filters.

Mr. Bidder produced two bottles containing what looked like sparkling water, and in cross-examination he asked witness whether he would be surprised to learn that those were samples of the Salford effluent taken at the same time as the samples which were alleged to have become putrescent. Witness said he would not be surprised if the samples he had previously referred to were not as clear as that.

Mr. Bidder said he could have produced a large number of samples equally clear, but by a cab accident a large number of bottles had been smashed. He asked witness to draw the cork from one of the bottles that had been handled by him. Witness said he would rather not. Counsel took out the cork and had a smell on his own account, and remarked that after perhaps the witness would not be frightened. Witness smelt the bottled effluent, and his example was followed by the jury, apparently without any ill effects upon either of them. The Judge said the smell was very slight.

Mr. Bidder: You say you saw a scum?—Yes.

Is not the Ship Canal characterised by scum all along?—No.

Mr. Bidder: Then my information, derived from the newspaper, is defective. What do you say as to the model process of sewage treatment—the Manchester process?

The Judge: But it is said that the Manchester process is not a model process.

Mr. Bidder: At any rate, what process does the Manchester Corporation use?—I believe they use sulphate of iron and lime at present time, but I am not certain.

In re-examination by Mr. Sutton, witness said the Manchester Corporation were not filtering their sewage at present, but they were making provision for filtration.

The Judge said he thought it would be better to keep clear of technical details.

Mr. Frank Scudder, assistant to Sir H. E. Roscoe, M.P., consulting chemist to the Joint Committee, produced a large number of bottles containing samples of the effluent from the Salford sewage works.

One of the bottles contained such a very small quantity that Mr. Bidder was induced to remark that surely that was not all that was taken in one day. "Perhaps Mr. Bidder has drunk some of it," fully suggested Mr. Sutton.

ly to questions, Mr. Scudder said that each of the samples produced a very bad smell. There had been no marked improvement in samples since the first was taken. Subjecting the samples to the standard tests he found that they contained an excessive amount of organic matter, which on keeping underwent secondary decomposition. In the last few samples were clear in appearance, they had a bad smell. Where lime was used as a precipitant the effluent contained a large amount of organic matter in solution. No further treatment could rid the effluent of that organic matter; that could only be done by filtration, in addition to precipitation. He thought there would be no difficulty in reducing the amount of impurity in the Salford sewage to one grain of impurity to the gallon. It had been done by other authorities.

Judge: With sewage of a crude character similar to that of Salford—Yes.

Question: Rochdale, for instance?—Yes, and Rochdale has a sewage.

In reply to further questions, witness said that other authorities had hitherto had nothing but the lime process were now going to filtration. The Bolton Corporation, who formerly used lime as a precipitant, had had proceedings taken against them, and now they were sent to go in for filtration.

Bidder pointed out that even by the Joint Committee's own test results were twice as bad as those of Salford.

Question: Bidder said he did not know what the average was, but in some cases Bolton results were worse, and in others better than those of

examined by Mr. Bidder, witness said he knew the Corporation since April last been trying various processes for the treatment of sewage. So far as he knew, the lime process in use at the Salford Sewage Works in October only differed from the lime process in April to the extent that a carbonator had been introduced. The effect of the carbonator was, he supposed, to aerate the effluent, and he considered that the effect of the aeration on the effluent was very little. He agreed with the late Dr. Angus Smith's view that the greatest importance in delaying putrefaction and secondary decomposition, but he did not regard it as a means of purification. He did not know that at Salford Sewage Works a large tank had been erected for the violent aeration of the effluent. His own plans of a section of the cascade, he said that such things as were provided by some other authorities, but very little benefit had derived from them. One of the tests he had applied to the effluent of the Salford effluent was the permanganate test. He admitted that Professor Wanklyn was a great authority in such matters, but did not agree with Professor Wanklyn in saying that that test in the Salford effluent was unsatisfactory, and had been to a great extent remedied.

Sir H. E. Roscoe, M.P., was then called.

Bidder said he would like to say a word before they went to the next question. It was going to be a long business if they fought it out. He compared with a large body of evidence, and was quite sure that the Corporation would be able to show that the Corporation committed no offence under the Act. The parties to the proceedings were two great public bodies, both zealous for the same end.

The Joint Committee, he knew, was constituted for the purpose of effecting the purification of the river. And the Corporation in spending large amounts of money for years in trying to arrive at the best way of treating their sewage. They believed they were on the right path, and they were following that path out. Under the circumstances he thought it was not a case in which they should have any quasi-penal proceedings brought against them. By way of settling out an olive branch he wished to make a proposal on behalf of the Corporation. From what the Corporation had done and was doing (for their works were not completed) they believed they would obtain a satisfactory result, and he was prepared to say that if proceedings were withdrawn the Corporation would undertake at the end of six months their results were not satisfactory, in the opinion of an independent person whose judgment could be relied on, he would propose Mr. Mansergh—they would execute such works and alterations as might be considered necessary by Mansergh in order to obtain an adequate and reasonable purification. He assumed that the Joint Committee had for their object not a story, but the attainment of the public good, and he hoped they would assent to the proposal he made.

Question: Bidder said their only object was to see that the Ship Canal and the river were not polluted. But he could not accept the proposal.

Judge: Perhaps not, but may not the proposal lead to some-

It is obvious that if the case goes on it will not end here, and will be large costs to pay by one body of ratepayers or another.

Bidder: And in any case at least six months would elapse before any could be done by us.

Question: Bidder said he could not accept the proposal. They had no embarrassment the Salford Corporation, but it must be remembered

that the Corporation had passed a resolution, which he could not see had ever been repealed, to borrow £50,000. to carry out purification works, and had done nothing. If they adopted the proposal that had been made the Corporation would be no further forward six months hence. He would be prepared, however, to have an order made against the Corporation and to have it suspended for twelve months.

Mr. Bidder said the Corporation could not accept that.

Sir H. E. Roscoe, M.P., consulting chemist to the Joint Committee, confirmed the evidence of his assistant, Mr. Scudder, as to the analyses of the Salford effluent and as to the inefficiency of precipitation by lime when unaccompanied by filtration. He believed that if filtration were carried out it would greatly improve the Salford effluent.

In cross-examination witness said he could not say whether the Salford results were quite as good as the Manchester results. Manchester purified with lime and iron, but it was intended to filter as well. The Manchester Corporation had never been prosecuted, but the Joint Committee would prosecute them to-morrow if it were thought that they did not intend to provide for filtration.

At this stage the Court adjourned. The hearing was resumed yesterday, 25th inst.

IMPORTS AND EXPORTS FOR DECEMBER, 1894.

THE Board of Trade returns for last month are on the whole satisfactory. The imports of petroleum have been much less, olive being the only oil which showed an increase. Alkali shows an increased export compared with same month in 1893.

IMPORTS OF FOREIGN AND COLONIAL PRODUCE.

ARTICLES.	Quantities.	
	1893.	1894.
Margarine	120,320 Cwt.	90,477
Copper Ore and Regulus	16,816 Tons.	14,228
Pyrites	49,724 "	53,077
Tin	50,477 Cwt.	45,331
Alkali	8,645 "	22,114
Brimstone	52,748 "	14,370
Dyes, Coal Tar	54,798 £.	60,125
Saltpetre	23,477 Cwt.	26,531
Petroleum	18,143,511 Gall.	14,085,381
Turpentine	85,678 Cwt.	67,490
Guano	3,331 Tons.	107
Nitrate of Soda	5,020 "	2,905
Paraffin	92,576 "	60,597
Rosin	290,194 Cwt.	133,156
Tallow and Stearine	139,953 "	111,265
Oil Seed Cake	32,211 Tons.	26,727
Wood Pulp	24,653 "	24,722

EXPORTS OF BRITISH AND IRISH MANUFACTURES.

ARTICLES.	Quantities.	
	1893.	1894.
Alkali	427,740 Cwt.	571,121
Cement ..	30,223 Tons.	22,302
Coal and Coke	2,312,944 "	2,637,604
Copper, all kinds	71,345 Cwt.	90,042
Iron and Steel	194,598 Tons.	199,984
Chemical Manures	21,145 "	20,413
Oils, seed	5,348 "	4,460
Salt	43,394 "	60,512

PERSONAL.—We learn that Mr. Herbert Murch has opened an office at Scottish Provident Buildings, 9, Albert Square, Manchester, for the purchase and sale of coal tar pitch for fuel-making and all other tar products.

ALUMINIUM PLATING.—The processes ordinarily used for covering metals with zinc, tin, and lead have not, up to the present, appeared to be applicable to aluminium. When a plate of aluminium, mechanically or chemically cleaned, is immersed in melted tin, zinc, or lead, these metals slide over the surface of the aluminium without alloying therewith. *Le Genie Civil* says that M. Oliven has found that, in order to fix the above-named metals, it is necessary to submit the surface of the aluminium to a vigorous brushing in the metallic bath. For this purpose a steel brush or any other analogous instrument may be used. Under these conditions the aluminium becomes covered with a regular layer of the molten metal. The want of success of the operation was due, it appears, not to the want of affinity of the aluminium for the metals in question, but to the immediate formation in contact with the air of a thin stratum of oxide of aluminium, which can be removed by friction.

Official Memoranda.

(From the Board of Trade Journal.)

CUSTOMS TARIFF OF TASMANIA.

THE following is a special abstract of the duties leviable on imports of merchandise into Tasmania.

A duty of 10% *ad valorem* is levied upon the following: *Carbolic Acid, Alum, Crude Arsenic, and Stearine.*

ARTICLES.	RATES OF DUTY.
	£ s. d.
Tartaric Acid	lb. 0 0 4
Sulphuric Acid	cwt. 0 2 6
Citric Acid	lb. 0 0 4
Hydrochloric Acid	cwt. 0 2 6
Nitric Acid	cwt. 0 2 6
Acetic Acid, under 33%	lb. or pint 0 0 2
Acetic Acid, for every additional 10%	lb. or pint 0 0 1
Candles	lb. 0 0 2
Cements (mineral)	cwt. 0 0 9
Carbonate of Soda	lb. 0 0 1
Naphtha	gallon 0 0 6
Petroleum and Gasoline	gallon 0 0 6
Paints, all kinds	lb. 0 0 0½
Salt	cwt. 0 1 6
Soap (except fancy or perfumed)	lb. 0 0 1
Soap, fancy or perfumed	lb. 0 0 3
Soda Crystals	lb. 0 0 0½
Starch	lb. 0 0 1
Spirits of Tar	gallon 0 0 6
Treacle and Molasses	cwt. 0 3 6
Turpentine	gallon 0 1 0
Varnish and Polish (o.m.)	gallon 0 1 6
Vinegar (less than 10% acetic acid)	gallon 0 1 0
Whiting	cwt. 0 0 9

The following articles are admitted *duty free* :—

Bones	Oil, Cod and Sod, for Tanners
Copper Sulphate	Oil, Palm, unrefined
Carbolic Powder	Shale Oil Refuse
Chalk	Paraffin and Mineral Wax
Clay, Fire, in lump	Phosphorous
Ferrous Sulphate	Pitch
Potassium Cyanide	Potash
Dyewoods and Dyestuffs for manufacturing	Pearlash
Creosote crude	Manganese
Calcium Carbonate	Cobalt Oxide
Chloride of Lime	Resin
Logwood	Salt, Rock
Manures	Soda Ash
Molasses, raw	Soda, Caustic
Myrabolams	Sodium, Silicate
Oil Cake	Sumac
Oil Coconut, unrefined	Tannin and Tannin Extracts
Suet, Tallow, and Grease	Tar
	Valonia

CONDITION OF THE LEAD-MINING INDUSTRY IN SPAIN.

Sir H. Drummond Wolff, Her Majesty's Minister at Madrid, in a despatch to the Foreign Office, encloses the following translation of a Bill brought into Congress for the relief of those engaged in the lead mining industry in Spain :—

The project of law for the removal of the present heavy duties on the lead-mining industry is to be discussed in Congress. The duties are causing a severe crisis in that trade as affecting thousands of families whose means of subsistence is in imminent peril; and it is to be hoped that the Courts will give to the question the attention it merits.

The following data will show the difficulties with which that industry has now to contend :—

The last liquidation in the prices of silver and lead in the Cartagena market gave 10 pesetas per quintal for lead and 3 pesetas 25 centimes per ounce for silver, the lowest prices ever reached.

When the quintal of lead was at 15 to 20 pesetas and silver at 4 pesetas 50 centimes per ounce, the mining industry only paid 1 per cent. taxes on the gross produce and the scale of bulk (canon de superficie) established by law. Now that prices have fallen so low, the tax on production has been raised to 2 per cent. and the scale of bulk increased by 30 per cent. Leads and argentiferous galena pay 10

pesetas per ton export duty. Explosives, above all dynamite, necessary for working, have been taxed at a peseta per kilo., make matters worse the taxes on coal have likewise been raised. The ruin which has fallen upon the mining districts of Spain is an abandonment within one year of 699 mining concessions in alone. The smelting works, unequal to facing the crisis, have closed or failed. Those with large resources, such as the "Elisa" of Mazarron, and some others of importance, have dismissed two-thirds of their workmen, and if the present state of lasts the men now in work will be without it.

LEGISLATION AFFECTING ADULTERATED OIL PORTUGAL.

The Portuguese Government has recently published the following regulations relative to the prohibition of the offering for sale of adulterated oils.

Art. 34. The consignment, the sale, and the offering and for sale of any oil other than olive oil are prohibited.

Art. 35. Oil extracted by a mechanical or chemical process oil cake shall not be consigned, sold, or placed for sale, except the demonination of olive-cake oil.

Art. 36. Any other vegetable or animal oil, shall not be consigned, sold, or offered for sale, except under the name of the substance which it is extracted.

Art. 37. The mixture of olive oil with other oils shall not be consigned, sold or offered for sale, except under the name of the entering into its composition.

Art. 38. Receptacles containing the cake oil or other vegetable animal oils should bear such an inscription in indelible characters the nature of the oil: cake-oil, cotton-seed oil, mendolu oil, sea oil, fish-oil, &c., according to origin.

Art. 39 *et seq.* Offenders may be punished as the case may be by imprisonment from one month to a year, and by fines varying between 10,000 and 500,000 reis.

THE EUROPEAN BEET SUGAR CROP.

	1894-95.	1893-94.	1892-93.	1891-92.
	Tons.	Tons.	Tons.	Tons.
German Empire -	1,725,000	1,393,374	1,225,331	1,198,786
Austria Hungary -	1,000,000	841,809	802,577	786,650
France -	830,000	579,111	588,838	650,550
Russia -	620,000	660,000	455,000	550,000
Belgium -	275,000	235,000	196,699	180,000
Holland -	85,000	75,015	68,070	46,000
Other Countries -	140,000	111,000	92,000	88,000
	4,675,000	3,895,309	3,428,515	3,501,000

Correcting the figures for Germany by the official statistics, making a slight addition of 3,374 tons, and adding 10,000 to the estimate for Russia, the 1893-94 total is brought up to 3,895,309 tons.

THE PREPARATION OF INDIA-RUBBER IN EAST AFRICA.

Mr. A. Carnegie Ross, Her Majesty's Consul at Beira, in a report to the Foreign Office, refers to the unskilful manner in which the rubber is prepared for sale by the natives of that district. He forwards a sample of the rubber which fetches a good price in the European markets owing to the fact that it takes much time and money to cut out cores of wood and other substances round which the Natives wind rubber as they gather it, merchants at Beira are very chary of buying and exporting the fingers. As a large part of the india-rubber exported from Beira in 1893 went to England, Mr. Ross has thought it advisable to send home these samples in the hope that some British manufacturers may have in stock, or might make a machine-knife which would do the cutting open and coring of these fingers so expeditiously and cheaply as to enable the local merchants to prosecute the rubber trade at a profit.

LEAD AND TIN MINING IN INDIA.

Lead-mining is in a dormant condition, renewed efforts made some time ago to work galena in Bhagalpur—seemingly the only local locality for this product—having turned out a failure. Great expectations are entertained in respect of tin—an industry which many years was in a depressed and neglected condition. Capt. Menzies, of Singapore, acquired a lease in the Malimau township in the Mergui District in Lower Burmah, in 1893, began operations

porting a number of Chinese miners from the Straits Settlements, the concession is fully expected to develop rapidly.

ADMITTING TUNISIAN OIL INTO FRANCE FREE.

M. R. Drummond-Hay, her Majesty's Consul-General at Tunis, in report to the Foreign Office, transmits an extract from the *Journal officiel* of Tunisia, containing a decree by the President of the French Republic, authorising the importation into France, free of duty, of 50,000 litres of olive oil of Tunisian origin and produce.

REDUCED DUTY ON ENGLISH SALT FOR FINLAND.

M. J. Mitchell, her Majesty's Consul-General at St. Petersburg, in report to the Foreign Office, states that he has received information from the British Vice-Consul at Helsingfors to the effect that English salt was in future to pay the lower rate of duty of 25 pennis per hecton importation into Finland, instead of 50 pennis as formerly.

SCOTCH OIL AND PARAFFIN INDUSTRIES DURING 1894.

Our summary for 1893, in this *Journal* a year ago, that period had to be designated as "the blackest on the record since the industry arose." As regards 1894, this verdict has to be departed from considerably, although in a sense the year has been almost equally unproductive of profit. To shareholders of those companies which remain solvent (with but one exception, hereafter to be cited) there came no dividend at all, as a result of the spring balancing; in fact just as badly as they did out of the previous year's clearing of accounts. But the position was improved to this extent, the gross profits were greater, and more was available for payment of interest on loans and debentures, and towards the writing-off for depreciation in the value of mines and plant. The year before these in some cases left either entirely unprovided for, or discharged of the reserve fund account. But, while the still able-bodied companies fared better to this extent, those concerns that had previously run into difficulties, and had been seriously crippled, fared worse than they had done, partly because of insufficient ready capital whereby to carry on the working economically, and still more perhaps because their needs forcing them at times to sell their products at a low price, and not always at the full market value. The Clippens Oil Company, which a year or two ago went into liquidation, but got another chance to retrieve itself by the action of creditors and shareholders, made a working loss of £2,000 on a period of 15 months' production, and had nothing to meet £5,000 due as interest on loans and debentures, so that these unfortunate speculators on the winning hazard are fully £10,000 worse off than they were fifteen months ago. The Burntisland Oil Company, which came down three years back or more, and was similarly regaled by the creditors and shareholders (rendered desperate, as they were, by being unable to find purchasers anywhere for the mines and plant), has now ceased to struggle further. Production has long since been discontinued, and even the mines are totally abandoned to the ground flood water. The liquidators would sell gladly, but there are no buyers, except, perhaps, for odd little lots of the refining residue. These unfortunate undertakings were a few years ago held in high repute, shares being purchasable only at a very large premium. There is so much that is ruinous, or at least unproductive of profit, if not ruinous, it is a relief to be able to cite even one exception. We can do so this year by help of the same concern which was last figured in our summary of January, 1894. The Dalmeny Oil Company, on the working of one year up to October 31st, 1894, have been able to announce a dividend at the handsome rate of 20 per cent., free of income-tax. It may be remembered that for the previous year they paid 10 per cent., being the Company that paid anything. This Company does not refine the rest, and therefore has nothing to do with the markets for kerosene oil, lubricating oil, solid paraffin, and paraffin candles, which are for the most part depressed to an extent which either represents actual loss, or at least an insufficient profit. The Dalmeny Company make crude oil and sulphate of ammonia only. For the former it is always a sure and pretty fair market; the latter for a period of two years, and, until recently, has been high-priced. These two, which are thus seemingly prosperous in a strikingly solitary way, are of very small extent, and the load of capital (unlike the others) they have to sustain, is a light one. If the Dalmeny Oil Company had earned more dividend during 1893-94, and the other Companies (the exceptions above noted) did better in meeting interests, &c., the cause of the betterment lay with sulphate of ammonia alone, the only product that carried prices which were distinctively profitable. It is a curious matter for the industry that sulphate of ammonia has been

dropping in price so long, and its present and past low values must tell damagingly on the balancing of 1895. Most of the other products of the industry began the year at unprofitable values, and some have fallen since. Burning oil, which is the largest output of all, began at fivepence per gallon, delivery at the works; but the Scotch market is now regularly supplied with American and Caspian oils offered at low rates, and this, at a midsummer consultation of Scotch makers, caused a further drop to 4½d., which is now the price. This is for Scotch consumption only, English and Irish buyers getting the same oil for about a halfpenny a gallon lower. Such a price leaves the smallest of margins, and will leave no margin at all unless makers constantly cut their refining costs down to a sort of miracle of lowness, as compared with those of the old time, when burning oil prices were high, and original investors were laying by fortunes out of it. In the extremely low position of burning oil it is to be found the cause of the declension of this once lusty industry. Even the settled rise of one penny per gallon, steadily continued and maintained, would wonderfully change the face of things even now, but there is but little prospect of any advance. The flash-point agitation has been proceeding, and the Commission of Inquiry still deliberates at times, but the exclusion from the British markets of low flash-point foreign oils is certainly not yet within measurable distance of probability. Certain gravities of these shale oils are still well in request for gas making and gas enriching, and their prices have even advanced a little; but cheapness is one of their attractions, and makers dare not ask too much if they would keep the inquiry alive. Lubricating oils have had a pretty even market on the whole, some gravities gaining a little and others losing. Paraffin scale and wax have remained stationary at from 1½d. to 2½d. per lb., too low for much profit; and candles have also been lower than makers care for. All the works suffered severely from the long continued strike of the Scotch coal miners; and what with the heavy drop in sulphate of ammonia, and the generally low values of the other products, the prospect to shareholders, as regards 1895 results, is not at all a hopeful one.

Since the foregoing was written, an influential section of the American producers of solid paraffin has proposed to the Scotch makers a renewal of the old Scotch-American combination, whereby solid paraffin was for some time kept up on the market at a certain price. The idea, now, is to advance the article one farthing per lb. This would help the Scotch industry appreciably; but, unfortunately, these agreements are always of very precarious tenure. The chief consumers (the British candlemakers) rebelled against the old agreement three years ago, and, after a war of a few months, destroyed it utterly. They are likely enough to rebel again if confronted with an arbitrary rise in their raw material, especially at a time when only low values for the finished candles are procurable in the market. Something much more reliable than this is wanted for the assured salvation of Scotland's much-tried oil and paraffin industry. Any mere scale and wax agreement, even if consummated and submitted to by consumers, cannot affect the depressed position of burning oil, the most important of all the products, as by far the most bulky, or those of lubricating oil and sulphate of ammonia—all of which are likely to be simply left (as now) to do the best they can on an open market.

Legal Intelligence.

HIGH COURT OF JUSTICE. CHANCERY DIVISION. (Before Mr. Justice North.)

THE SALT UNION (LIMITED) v. THOMSON.

It may be recollected that this is an action to restrain the defendant from working a new salt well so as to trespass on the plaintiffs' property; it was also alleged that the defendant had, since the action commenced, flooded his own works, and by so doing caused water to percolate into some of the plaintiffs' shafts and prejudicially affect their workings. The defendant had given certain undertakings (*C.T.J.* 391, p. 306, and 393, p. 339), and Mr. Dickinson, late chief inspector of mines, had been appointed to inspect the defendant's premises, the plaintiffs giving, on their part, the usual undertaking as to damages. Mr. Dickinson had made his report.

Sir Richard Webster, Q.C. (Mr. Samuel Hall, Q.C., and Mr. O. Leigh Clare with him), mentioned the matter. He said the report of Mr. Dickinson was in favour of the defendant, and withdrew the defendant's undertakings.

That course was assented to, and it was arranged that the matter should stand over for a fortnight, with a view to the plaintiffs' experts considering the report of Mr. Dickinson and having the question of an inquiry into damages under the plaintiffs' undertaking gone into at once.

Mr. Swinfen Eady, Q.C., and Mr. Frederic Thompson appeared for the plaintiffs.

SOCIETY OF CHEMICAL INDUSTRY.

LIVERPOOL SECTION.

A meeting of this section was held on the 9th inst. At the commencement of the meeting Dr. Campbell Brown brought to the notice of the members a copy of an old book, interesting both historically and also by reason of the valuable information contained. The book is entitled "L'art de convertir le fer forgé en acier, et l'art d'adoucir le fer fondu." It was written by Réaumur, of thermometer fame, and was published at Paris in 1722.

Mr. Frank Tate then read a paper on "Refrigeration," in which he called particular attention to the methods of cold storage on land and aboard ship, illustrating his remarks profusely with diagrams.

Considering subsequently the question of the making of block-ice, Mr. Tate drew attention to the figures of Heyroth and others, which would seem to point to the conclusion that the freezing of water does not necessarily bring about a rejection of bacteria, but that these organisms remain imbedded in the ice to a considerable extent. The paper concluded with a consideration of the separation of salts from solution by the aid of cooling.

A discussion took place which turned mainly on the question of refrigeration *versus* evaporation. For many purposes, Dr. Hurter pointed out, there is a decided advantage in the use of cooling, as, for instance, in the crystallisation of chlorate of potash from its solutions. The separation of common salt by cooling could scarcely be successful, owing, mainly, to the slow decrease in solubility of sodium chloride with lowering of temperature. The general opinion of the meeting was that for most chemical manufacturing purposes the newer forms of evaporation plant were more conducive to good results than were the methods of refrigeration.

The next meeting of the Liverpool Section will be held on Wednesday, February 6th, when Mr. A. Smetham will read a paper on "The Reversion of Superphosphate," and Mr. Walwyn White a paper on "Portable Railways for Works."

SCOTTISH SECTION.

A postponed meeting of this section was held on Tuesday, January 15th, in the Society's Rooms, Bath-street, Glasgow. There was no chemistry paper forward for reading, and the business, not inappropriately, took the shape of an exchange of comments on the difficulty of a supply of suitable papers for these meetings. Mr. G. Beilby thought the time had arrived when some systematic reform should be embarked in, towards the removal of a difficulty from which all the sections of the Society habitually suffered—with the exception, perhaps, of the London section, which was more advantageously situated in this respect. They wanted, at the same time, the introduction of a judicious variety in the subjects dealt with. Over the past ten years the actual productive portion of the membership of the Society had changed but little, and the bulk of the young members were habitual listeners merely. This was an unhealthy feature, for the Society, with a threat of senility in it, so to speak, if continued indefinitely. Young chemists were thus unproductive, not from want of ability, but, he thought, merely from lack of some well digested suggestion as to suitable subjects for papers. The Council of the Society should take this matter in hand, and draw up tables of suggestions for the use of members—especially young members—and therein, ultimately, their "Journal" (proud as they were of it already) would benefit by being able to present features more judiciously organised and variegated than had been the case up to now. Particularly wanted was some mapping out of those fields of research still unexplored, or insufficiently explored, so as to constitute a sort of guide to young workers. Reformed somewhat on these lines, the Society, he thought, might become a species of practical training school for young chemists, to a degree never hitherto touched. In conclusion, he proposed a series of questions advisable to be put in circular form to the whole body of members, the answers to which would, no doubt, materially aid, and in no small degree, guide, the Council in whatever action it might take in the matter. (This table of questions will no doubt find place in the *Journal* of the Society.) Professor Henderson said he had not been seven years secretary of the Scottish Section without becoming most intimately familiar with the ever-present stress arising from the scarcity of papers. He sympathised with everything Mr. Beilby had said, but undoubtedly there were difficulties in the way. Masters in special chemical industries were as a rule unwilling to disclose the more important of their methods, and the young chemists they employed were commonly pledged to publish nothing bearing upon these methods, or, at least, not to do so without previously obtaining permission. This was a hindrance of the greatest sort in the way of young men entering on the preparation of papers for reading before their Society. He feared that some sort of endowment was absolutely necessary before much progress could be made. The Engineering Society spent a good deal of money annually in that way, but that Society had funds specially for that pur-

pose, and unfortunately their Society had not. Still a sufficiency of capital might be raised annually, either through the action of the Central Council, or they might do so themselves, and as an individual experiment, after, of course, procuring the sanction of the Central Council thereto. Suggestion such as Mr. Beilby had desiderated was good, but more was needed to bring out the latent force of the young members, and to thus infuse the new blood necessary to the end desired. The incentive of the premium was needed, and if they could furnish that, together with guiding suggestions on a scheme such as that dwelt upon by Mr. Beilby, they would, no doubt, in time greatly stimulate the production in literary form of results of true research, and help to make their "Journal" a more "up to date" repository than it had been yet. Several other members spoke, and agreement was general that some action was necessary.

SINGULAR FATALITY TO A MANURE WORKS EMPLOYEE.

AT St. Helens Town Hall, on Monday, before Mr. S. Brighouse, county coroner, an inquest was held on the body of Isaac Biddulph, labourer, 15, Edgeworth-street, Sutton. The deceased was employed at the patent manure works of Messrs. Crone and Taylor. Mr. Jackson, inspector of factories, attended, and Mr. T. Garner (Messrs. J. O. Swift and Co.) was present on behalf of the above firm.

Mrs. Biddulph stated that her husband had always been a strong healthy man, and had never required medical attendance for 24 years. He came home about noon on Wednesday last, and she noticed a swelling on the right side of his neck. He said he did not feel any pain, but there was a "fluttering" sensation. He returned to his work in the afternoon, but the swelling was worse in the evening, when he visited Dr. Casey, who told him it was a very serious case, and ordered his removal to the hospital. In reply to Mr. Jackson, witness said her husband was always very particular about washing his hands at home. She did not know what arrangements they had for washing at the works. When engaged on night duty, her husband always had his meals at the works.

Dr. Fred Knowles said that on Thursday afternoon he found Biddulph suffering from acute inflammation of the neck, with a great deal of swelling. Biddulph said he had a pimple on his neck some days before, and he had several times scratched it, making it more irritable. He attributed the whole thing to that, but said he was perfectly well on the Wednesday morning. There was no resident medical man or surgeon at the hospital, and he (witness) communicated with the firm upon the matter, and he received a reply to the effect that the firm did not consider themselves responsible for the man's treatment.—Mr. Garner: The firm did not appreciate at that time that the man was suffering from any disease contracted at their works.—Witness, continuing, said the swelling in the neck grew worse, and on the Friday he and his brother performed an operation to relieve the difficulty of breathing. The man died, however, on Saturday morning. He had made a post-mortem examination. The man had died from acute inflammation of the neck and general blood-poisoning, due to a special organic poison, the bacillus of anthrax. Dr. Robertson, the borough medical officer of health, had kindly made him some cultivations on sterilized jelly from material taken from the man's neck after death, and those cultivations, examined under the microscope, were simply pure samples of the "bacillus anthracis." The disease was known by various names, as for example, malignant carbuncle, malignant oedema, woolsorter's disease, splenic fever of animals, &c., and though not at all a common affection, it was nearly always fatal, and was usually acquired by dealing with the carcasses, hides, or wool, &c., of animals, principally foreign, that had died of it. Quain's Dictionary of Medicine gave wool dust, used in the manufacture of patent manures, as a common and often overlooked cause. He would describe the death as due to malignant oedema, or blood poisoning, which would include everything. It was possible that the disease could arise by breathing or by eating, and in the former case a respirator would probably prevent infection. The disease in that case had not been caused by inhalation, but by inoculation. The special remedies against infection through the hands would be a washing of carbolic acid in water.—Mr. Jackson said that the special rules provided by Act of Parliament in respect of other occupations did not apply to manure works.—Dr. Knowles added that where a man was poisoned under such circumstances as in the case, it spread rapidly, and unless strict treatment was obtained within six or twelve hours, nothing could be done to save the man's life, as the case would be a hopeless one.

The Coroner remarked that a knowledge of such a danger could not be very widespread or general, and he thought the posting of rules or information in regard to it should prove beneficial to those engaged in the trade. There were some lessons to be learned from the case, and

he should suggest to the jury that any recommendation be left to the Government inspector, who would present a report to the Home Office with the view of having special rules framed for such cases.

Mr. Harry C. Shaw, for eight years manager of the works, gave formal evidence that no such case of poisoning had ever previously come to his knowledge.

The Coroner remarked that there was no evidence that Messrs. Crone and Taylor had been negligent in the matter, or that they had any previous knowledge of the liability of their servants to take the disease.

The jury returned a verdict that death was due to blood-poisoning, adding, that, considering the dangerous nature of the work in which they were engaged, Messrs. Crone and Taylor might have exercised more prudence in obtaining medical aid for the man Biddulph. They left for the consideration of the Government inspectors the desirability of framing special rules for the guidance of men at that and other similar works.

THE GERMAN POTASH SALTS INDUSTRY.

THE importations of German potash salts into the United States during the past year have been the heaviest in the history of the trade. Last spring there was a large demand for them, but since that time the low prices for cotton in the South, and the extremely dry season in the North, compelled a curtailment of the output of complete fertilizers for the fall trade to some extent, and this naturally has had a depressing influence upon potash salts interests. There have recently been enormous receipts of these chemicals at the various ports, and as a result there is a tendency on the part of some of the buyers to re-sell a part of their holdings.

The outlook, says the "Oil, Paint, and Drug Reporter" is not at all encouraging in view of the fact that the output of finished fertilizers in the South is likely to be curtailed one-third and possibly 40 per cent., in consequence of the inability of the planters to buy the full quantity, because of the light receipts from their last season's product.

In the north the prospects are scarcely more flattering. Collections have been very slow, and the fertilizer manufacturers are disposed to follow a very conservative course in the production and distribution of their goods next season. Pursuing such a policy they are likely, according to report, to curtail their output to a point which will be in line with the reduced requirements of consumption during the continuance of the present "hard times." As the consumption of these potash salts, in the manufacture of finished fertilizers, has assumed most important proportions within recent years, and more particularly within the past twelve months, the trade in them would naturally be greatly affected by the falling off in the consumption of finished goods, and unless conditions undergo a decided change in the near future the interests of the potash salts industry, so far as America is concerned, will in all probability suffer during the first half, at least, of the coming year.

Correspondence.

*. We do not hold ourselves responsible for the opinions expressed by our correspondents.

SPENT OXIDE EXTRACTING APPARATUS.

(To the Editor of the Chemical Trade Journal.)

SIR,—We note in your to-day's issue of the *Chemical Trade Journal* you are giving a notice of a Spent Oxide Extracting Apparatus as a new appliance. We beg to inform you this is not the case, as we introduced the same thing now more than five years ago, and it is known in the gas and chemical industry as "Bale's Apparatus for Testing Spent Oxide." It was noticed at the time we introduced it in different papers, and we are sending you a reprint from the *Journal of Gas Lighting*, January 20th, 1890.

We shall be obliged if you will insert this letter in your next issue, thus giving us the credit of our own inventions.

Yours, &c.,

London, January 19th, 1895.

BALE & CO.

PETROLEUM LAMP FATALITY.—Mr. S. Smelt held an inquiry on Monday concerning the death of Annie Jones, 42, housekeeper, of Reform Place, Jenkinson-street, Chorlton-on-Medlock. On Saturday night last the deceased was filling a lamp with petroleum oil from a bottle when the wick, which had been left lighted and simply lifted up, ignited the oil, and caused an explosion. The burning oil went over the woman, and she was speedily enveloped in flames. She was badly burned, and died at the Royal Infirmary on Sunday night.

Trade Notes.

CHANGE OF ADDRESS.—The Lion Still Chemical Company have moved that branch of their business devoted to the manufacture of amylacetate and ether flavourings to Cambrian Mills, Wood-street, Liverpool.

FATAL PETROLEUM ACCIDENTS.—The Birmingham coroner recently held inquests upon three persons who had been burned to death during the Christmas holidays. In two other cases paraffin lamps exploded with fatal effects. In a sixth instance a paraffin lamp exploded while a girl had it in her hand, and she was discovered a charred mass.

MESSRS. BLUNDELL, SPENCE, AND COMPANY, LIMITED.—The directors recommend a dividend of 8 per cent. on the ordinary shares, less income tax, payable 4 per cent. on February 26. The remainder on August 27 next, the warrants to be posted on those days. This will leave £6, 18. to be carried forward, as against £5,976. last year. The Anchor Wharf rebuilding fund amounts to £4,022., and the whole of this sum is now invested in Consols.

CHEMICAL WORKS REGISTRATION TAX.—A representation to the Board of Trade by a leading Manchester firm of chemical manufacturers as to the needless expense and trouble incurred in remitting the annual registration tax on chemical works in the form of Post-office orders has induced the President of the Board to overlook the strict letter of the Act of Parliament on the subject, and to accept cheques in payment. This anti-bureaucratic step is very creditable to Mr. Shaw-Lefevre.

PERSONAL.—Mr. Henry Tate, with the well-known interest he takes in the advancement of technical education, has forwarded to the committee of the Liverpool School of Science, Technology, and Art a generous donation of £50. towards the prize fund, with a promise of a similar amount for two more years. The committee have accordingly adopted a scheme of prizes, to be called the "Henry Tate Prizes," which will be open for competition on the work of the present session.

WOOD PULP *via* THE CANAL.—During the last week or so the arrivals of wood pulp have been universally heavy; indeed the imports into Manchester during the week ending on the 16th inst. exceeded those into any two ports of Great Britain put together, as the following figures will show:—Manchester, 13,776 packages; Hull, 7,156; Fleetwood, 5,817; London, 3,693; Liverpool, 441. The consignments to Manchester comprised 3,841 bales from Gefle, 3,726 from Sannesund, 2,202 from Gothenburg; 2,040 from Ronneby, 1,645 from Halmstadt, 240 from Christiania, 60 from Lourvig, and 22 from Rotterdam.

SMOKE PROSECUTIONS.—At the Manchester Police-court on Wednesday last week, before Mr. F. J. Headlam, several business firms were summoned under the Public Health Act, in respect of the emission of dense smoke from the chimneys of their respective works. Mr. James M. Brooks, Factory-lane, Harpurhey, fined 60s. and costs; Mr. C. Bradshaw, Albert-square, trading as Blacklock and Company, fined 10s. and costs. Mr. Hockin, who appeared on behalf of Mr. Bradshaw, admitted the offence, but said it was caused through the carelessness of the fireman, who had since been dismissed. Mr. John William Jones, Jackson-street, trading as Ashworth and Company, was fined 40s. and costs, and an order to abate the nuisance was made upon Mr. Aaron Booth, jun., South-street, and Mr. Charles Parkin, Oxford-street, trading as Potts and Parkin. Superintendent Rook appeared in support of the summonses on behalf of the Corporation.

EXPLOSION AT NOBEL'S WORKS.—A serious explosion occurred at Nobel's Explosives Factory, Ardeer, Ayrshire, a short while back. Some of the men in the factory noticed smoke issuing from inside the embankment of sand and corrugated iron surrounding a magazine in connection with the chemist's laboratory. The fire brigade was called out, and the hose applied to the roof of the magazine from outside the embankment. This not proving effective, some of the men incautiously went within the embankment in order to direct the hose upon the magazine. They were unsuccessful in getting the flames under control, and shortly after the magazine exploded with a loud report. The magazine itself was blown to atoms and the embankment damaged. Joseph Chandler, captain of the fire brigade, was killed, and Richard Hammond, labourer, Sergeant Connolly, who had charge of the magazine, and Mr. Kater, factory inspector, were injured. As it was Saturday the female workers in the factory, numbering 250, were not at work. The magazine was not used in the ordinary course of manufacture, but was employed by chemists in the laboratory for keeping under observation explosives of various kinds, which were there subjected to heat in order to find out how they would be affected if stored in tropical climates. It occupied an isolated position away from the main buildings, and consisted of a small erection 9ft. square, surrounded by walls of sand encased in corrugated iron and rising to a height of 18ft. or 20ft. Hammond has since died.

THE GAS SUPPLY OF LONDON AND LEEDS.

LONDON.

THE quality of the gas supplied to the City of London for the week ending December 22nd, 1894, was fairly good. According to the report of Mr. J. Dibdin, chemist and superintendent gas examiner to the London County Council, the tests made at the various testing stations showed two deficiencies in illuminating power. The following figures have been prepared from the report, and show the average composition of the gas calculated on the mean test:—

Company.	No. of districts tested.	Illuminating power (in stand. sperm candles).	Sulphur. Grains in 100 cu. ft.	Ammonia. Grains in 100 cu. ft.	Sulphuretted hydrogen.
		Mean average.	Mean average.	Mean average.	
Gas Light and Coke Co.	14	16'45	10'96	0'3	Nil.
South Metropolitan Gas Co.	6	16'5	11'66	0'26	Nil.
Commercial Gas Co.	2	16'3	7'45	0'25	Nil.

The supply for the week ending Dec. 29th, 1894, was less satisfactory, there being three deficiencies in illuminating power. The tests calculated as above were:—

Company.	No. of districts tested.	Illuminating power (in stand. sperm candles).	Sulphur. Grains in 100 cu. ft.	Ammonia. Grains in 100 cu. ft.	Sulphuretted hydrogen.
		Mean average.	Mean average.	Mean average.	
Gas Light and Coke Co.	14	16'35	11'07	0'28	Nil.
South Metropolitan Gas Co.	6	16'36	11'00	0'26	Nil.
Commercial Gas Co.	2	16'13	9'73	1'35	Nil.

The standard gas supplied by these companies should have an illuminating power of 16 sperm candles, and contain not more than 22 grains of sulphur and 4 grains of ammonia per 100 cubic feet of gas, on an average of three days with a pressure of one inch between sunset and midnight, and six-tenths of an inch between midnight and sunset.

LEEDS.

According to the report of Mr. T. Fairley, F.I.C., gas examiner for Leeds, the total proportion of sulphur contained in the Leeds gas during the month ended January 10th, 1895, has averaged 19'13 grains per 100 cubic feet. The following are the results of tests made at the Works in grains per 100 cubic feet:—

Place.	Date when Tests were made.		Total Sulphur.	Ammonia.	Carbonic Acid.	
	Dec. 1894.	Jan. 1895.			Weight.	Volume.
Messrs. Lamm.	11, 15, 16.	6.	11'74	1'73	48'90	70
New Weather.	16, 17.	8, 19.	11'86	3'04	45'90	70
York Street.	16, 18.	11.	14'00	0'82	32'95	50
Average at Works.	11.	11.	12'33	1'79	32'95	50
Average at Home.	11.	11.	15'81	3'71	48'90	70

During the month the average illuminating power of the Leeds Gas tested at 17, East Parade, the tests being calculated to a uniform consumption of 3 feet per hour, and corrected for variations in temperature and pressure to a temperature of 60° Fahr., and a barometric pressure of 30 inches, has been in standard candles (burning 120 grains of sperm per hour):—Standard against, 24 holes, 17'6; and standard blowings, 17'5.

Market Reports.

TAR AND AMMONIA PRODUCTS.

The products are practically without change from last week. The market as a whole is steady, but rather quiet. Carbolic acids are quoted at 1s. 10d. for 90% crystals, and 2s. 4d. for 40% crystals. Crude naphtha is unchanged. Naphtha stands at 1s. 2 1/2d. Anthracene and creosote remain the same. Benzene is dull: 90% 1s., and 50/90's 10s. 10d. Pitch, 100 lb. East Coast, 30s. 2; forward, 34s. 10s. 10d. Ammonia keeps steady, with a firm market. Dealers are buying eagerly, and there is every prospect of prices rising. Blackston is quoted £11. 10s., London outside makes £11. 10s. 10d. to £11. 10s. 10d., Hull £11. 8s. 9d., Liverpool, £11. 7s. 6d. to £11. 8s. 9d., 110 lb. Nitrate is slightly easier. £11. 8s. 9d. New month £11. 10s. Nitrate is slightly easier.

TYNE CHEMICAL REPORT.

TUESDAY.

There is no settlement in chemical trade matters yet, and any business there is, is only in a small way for prompt orders that can be delivered ex stock. There is little change in prices, though caustic soda has fallen in value to the extent of about 5s. per ton.

Bleaching Powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, nett; caustic soda, 76/77%, £9. 10s. per ton, nett; do., 70%, £8. 10s. per ton, nett; recovered sulphur, 2 cwt. bags, £4. per ton, nett. Soda ash, 48%, £3. 15s. per ton, nett; do., 52%, £4. 2s. 6d. per ton, nett; do., 56%, £4. 10s. per ton, nett; alkali, 36%, £2. 15s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. 15s. per ton, nett; do., 52%, £5. 5s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £5. per ton, nett; do., 1 cwt. kegs, £5. 10s. per ton, nett; silicate of soda, 75° Tw., £2. 17s. 6d. per ton, nett; do., 100° Tw., £3. 12s. 6d. per ton, nett; do., 140° Tw., £4. per ton, nett; soda crystals, casks, £1. 16s. 6d. per ton, nett, gross weight; do., 2 cwt. bags, £1. 16s. 6d. per ton, nett; chlorate of potash, 5 1/2 d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £4. 2s. 6d. per ton, nett; blanc fixe, £7. 10s. per ton, nett; chloride of barium, £7. 10s. per ton, nett; carbonate of alumina, £28. 15s. per ton, nett; aluminate of soda, £33. 15s. per ton, nett; in 5 ton lots, £28. 10s. per ton, nett.

SALT.—South Durham salt steady, at 9s. 6d. per ton, f.o.b. Tees.

COALS.—In moderate demand, and there is more inquiry for supplies of steam coals over the season. Prices generally are maintained, and to-day's quotations are:—Best Northumbrian steam, 9s. to 9s. 6d. per ton; second qualities, 8s. to 8s. 6d. per ton; small steam, 3s. to 3s. 3d. per ton; Bunker coals, 6s. 9d. to 7s.; best Durham gas, 7s. 3d. to 7s. 6d. per ton. Coke steady, at 14s. 6d. to 15s. per ton.

REPORT ON MANURE MATERIAL.

There has been more doing during the week, but at prices rather favouring buyers. Manure makers do not seem inclined to cover their requirements in phosphate rock much further ahead, and quotations remain as last reported. There is nothing fresh in cargoes of River Plate bones: anything near at hand and of handy size would find a market, but for shipment buyers are in no hurry. Crushed East Indian bones offer at £4. 12s. 6d. per ton for shipment, but £4. 10s. would probably do if bid. Considerable sales of Bombay bone meal have been made, January-February steamer shipment at £4. 7s. 6d. per ton, and that is closing value in that position. Supplies on spot being scarce, £4. 12s. 6d. would have to be paid, ex store. Common grinding bones find a market at £4. 5s. to £4. 7s. 6d. per ton, ex quay. Nitrate of soda is easier on spot, and there are now sellers of ordinary quality at 8s. 7 1/2 d. per cwt.; for fine quality, however, 8s. 10 1/2 d. is still the quotation. Due cargoes have changed hands at 8s. 8 1/2 d. to 8s. 8 3/4 d. per cwt., according to size and test.

Nitrogenous material, owing, no doubt, to the sharp advance in sulphate of ammonia, is more inquired for, but prices required still for the most part preclude business.

THE COPPER MARKET.

Messrs. Harrington and Co., in their fortnightly report, dated January 18th, 1895, state:—

Chili Charters for the first half of January are advised as 800 tons, against the same quantity for this time last year. Exchange, 14 1/4 d.

The year 1894 was another disappointment for copper, the market repeatedly advancing, but only to decline again, and prices closed at a reduction of £2. per ton, though at one time they showed a decline of £5. The price of refined copper in the States remains steady at 10 cents per lb., which is above the value of English sorts, and in consequence of this there has been a good business done for American consumption. This should tend to make the outlook for this year more hopeful than the last.

Since our last the market for G.M.B.'s has been irregular, and about 4,500 tons done at from £40. 15s. cash and £41. 5s. three months, down to £40. 7s. 6d. and £40. 15s. respectively, closing with buyers to-day at £40. 18s. 9d. cash and £41. 6s. 3d. three months.

The total stocks in Liverpool, Swansea, London, and Havre are 50,267 tons, against 50,754 tons on the 3rd inst., showing a decrease of 487 tons for the fortnight. The stocks include about 1,700 tons of copper sold, but not yet delivered to smelters. The visible supply for the fortnight is 34,112 tons, against 34,683 tons on the 3rd inst., showing a decrease of 571 tons. Refined and manufactured sorts are quiet, but steady. Quotations being:—Tough cake, £43. to £43. 10s.; best select, £43. 15s. to £44. 5s.; Indian sheets, £48. to £48. 10s.;

£51. 10s., and yellow metal sheets, 4½d. per lb. The touched last year for Chili bars was £43. in January, and 37. 17s. 6d., in June.

of furnace material comprise:—50 tons Portuguese ore, 8s. 4½d.; 100 tons Portuguese ore, to arrive, at 7s. 3d.; Umbria matte, c.i.f. Swansea, at 8s. 6d. per unit; 120 tons Peruvian ore, 45 tons argentiferous Peruvian matte, 27 tons Chili regulus, and 3 tons argentiferous River Plate in private terms.

THE METAL MARKETS.

WEDNESDAY.—Pig iron, easy: Scotch warrants closed Middlesbrough 34s. 6d. cash, and hematite 42s. 5d. Chili bars, G. O. B.'s and G. M. B.'s, closed at £40. 11s. 3d. cash, and £40. 17s. 6d. to £40. 18s. 9d. Tin, quiet: Straits closed at £59. 15s. to £60. cash, and to £60. 7s. 6d. three months; Australian, £59. 17s. 6d.; s, £63. 10s. to £64. Lead, steady: Spanish, £9. 12s. 6d.; English, £9. 15s. to £9. 17s. 6d. Silesian spelter, £14. 7s. 6d. Nickel, 1s. 3½d. Antimony, £32. 10s. first hands, £6. 12s. 6d.; second hands, £6. 11s. ss, quiet: Cape, 1½ to 1¾; Copiapo, 1½ to 1¾ to 3½; Mason and Barry, 1¾ to 2; Rio Tinto, 14½ to 15, 4½ to 4¾.

W. WEDNESDAY.—Market steady, with small business. at 41s. 5½d. and 41s. 5d. cash, also at 41s. 7½d. one month; closing with buyers at 41s. 5d. cash, 41s. 5½d. Cleveland closes with buyers at 34s. 6d. ask 34s. 6½d. Cumberland hematite closes with buyers cash, sellers ask 42s. 6d. Middlesbrough hematite done one month; closing with buyers at 41s. 5½d. cash, 41s. 6½d.

NORTHAMPTON, WEDNESDAY.—Orders placed since the settings are keeping the manufactured iron works fairly full still favour buyers. Sheets: doubles for galvanising, 6. 10s.; trebles, £7. Common plates, £6. 15s. to £7.; £8. to £8. 10s.; best, £9. to £10. Common bars, £5. Pig iron in slow demand. Prices easy. Northampton, ed; for forward deliveries—Derbyshire 39s., Lincoln 40s., coal, 7s. to 8s.; furnace, 8s. 6d. to 9s.

CELLANEOUS CHEMICAL MARKET.

all trade there are no changes of consequence to report in of the leading products. Demand continues fairly active at current rates, nearest values of which may be stated f.o.b. Tyne, 77%, £10.; f.o.b. Liverpool, 74%, £8. 17s. 6d.; s. 6d.; 60%, £6. 17s. 6d.; cream, 60%, £6. 17s. 6d. per lots and upwards. Ammonia alkali £3. 7s. 6d., bags, 10s., and £3. 17s. 6d., casks, f.o.b. In soda crystals an glut and low prices are still ruling: 36s. to 38s. per ton, makers' works. Bleaching powder is in fairly good request, time and export account: price, f.o.r. makers' works, to £7. 5s. per ton, and £7. 7s. 6d. hardwood, f.o.b., certain markets lower prices are being accepted to compete of the foreign makers. Chlorate of potash is nominally 1., but sales are reported at 5d.; chlorate of soda nominal 1½d. per lb. Sulphate of copper still a steady market at f.o.b. Brown acetate of lime has rapidly receded in value, have touched bottom figures at £5. 10s. to £5. 15s. per usual ports. For grey acetate of lime the price is only other acetates and acetic acid generally are weak. Potash, carbonate, are selling freely. White powdered arsenic at £14. 7s. 6d. to £14. 10s., f.o.r. Garston. Lead aged: foreign white acetate £24. per ton c.i.f., nitrate per ton. Yellow prussiate of potash firm at 10d. per lb. 3¾d. Sulphocyanides steady: barium 5d., ammonium

PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

Trade remains quiet, and imports of seed show an all-round compared with the same period of a year ago; turpentine only item showing an increase. The crushers here, lately, meeting to consider and discuss the situation, but nothing ult. The import of linseed for the week has been 1,000 Linseed oil on the spot remains steady at 19s. 6d. naked, re buyers for the month at 19s. 4½d. Forward quotations February-April offer at 19s. 1½d., and May-August at 18s. 6d.; boiled and refined ditto from £1. to £2. per casks 17s. 6d., and ordinary barrels at 25s. per ton extra.

Export for the week, 500 cwt. During the week the import of cotton-seed has been 8,995 tons from Alexandria. Refined cotton oil is quiet, at 16s. to 16s. 1½d. naked spot; January-April, 16s. 4½d.; May-August, 17s. 1½d. sellers. Edible qualities from 25s. to 30s. per ton more. Crude, 14s. 7½d. naked spot. The export of refined for the week has been 3,900 cwt. Turpentine spirits, 21s. 6d. per cwt. Castor oil, first pressure, 2½d. per lb. Tallow, £25. to £25. 10s. for town melted. "Vegaline," a new vegetable butter, sweet, white, and neutral, for culinary and confectionery purposes, £30. per ton. Cod oil quiet, £16. to £18. per ton. Soft soap, 14s. 6d. per cwt. Sod oil, for curriers, etc., £15. to £22. per ton. Boiled drying oil, £13. per ton. Engine and cylinder oils from £12. to £24. per ton.

CAKES.—Linseed cakes in steady demand, and firm in price: 95% pure, £6. 7s. 6d. to £6. 10s.; Russians, £6. 5s. to £6. 12s. 6d. Oil cakes, £5. 7s. 6d. Cotton cakes quiet: best makes, £3. 10s. to £3. 12s. 6d.; seconds, £3. 7s. 6d. Rape cakes: feeding, £4. 2s. 6d.; East India, £3. 15s.; Black Sea, £2. 12s. 6d. Round feed cakes, £3. 12s. 6d. per ton.

PAINTS.—Makers continue active. Prices are:—Dry colours: Venetian red, £3. 15s. per ton; oxide of iron from £7. to £18. per ton; blue black, £4.; mineral black, £4. 5s.; and yellow ochre, £3. 15s. per ton. Ultramarines from 3d. to 8d. per lb. Lime blue from £16. per ton. Venetian red, oxide of iron, black, blue, green, and yellow ochre paints can be bought from £12. per ton. White lead, in oil, £17. per ton. Paint remover from 25s. to 30s. per cwt. Black varnish, £5. 10s. per ton. Ready-mixed paints from £25 per ton. Oak varnish from 5s. 6d. per gallon.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil keeps dull in price, though a fair amount of business was done on Tuesday in soft oils. Lagos forward has been selling at £20. 10s. per ton transit. Olive keeps very firm, but business is suffering somewhat from the firmness of holders in adhering to ruling prices. Linseed is unaltered in price, but is inclined to be easier. Liverpool makes in export casks are quoted 21s. 3d. to 22s. per cwt. Cottonseed is easier, Liverpool refined being quoted 18s. to 18s. 9d. per cwt. in export barrels. Castor oil is cheaper, with only a small business doing at the reduction. Good seconds Calcutta is quoted 2½d., and first pressure French 2d. to 2½d. per lb. Tallow keeps steady. There is a fair amount of business doing at current values. Resin continues firm on spot, but there is a prospect of a reduction in prices. Spirits of turpentine have been very firm. To-day there is an easier tendency, spot value being 21s. 6d. to 21s. 9d. per cwt. Petroleum is steady to firmness, there being a good business doing with American 4½d. to 5½d. and Russian refined 4d. per gallon.

COLOURS are steady, without alteration in prices. Ochres: Oxfordshire, common, £10., medium, £12., best, £15., Derbyshire, common, 40s.; medium, 50s., best, 60s.; Welsh, best, 90s., seconds, 50s., and common, 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Umber: Turkish quiet; Devonshire, 50s. to 55s. White lead, £16. Red lead unchanged. Venetian red, £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2, 2s. 6d. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide, £22. 10s. to £25.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

The recent change to recovery on the part of sulphate of ammonia is still persevered in, and the market to-day is a strong and promising one, much to the relief of the makers. For spot business quite £11. was got by the close of the week, and for delivery up to the end of March higher money has been paid, probably in some cases up to £11. 7s. 6d. if not more.

Both bleaching powder and caustic soda are now in reduced stocks, and firmer of quotation, though not to the extent of any advance as yet. The other common chemicals are dull and unchanged.

In the mineral oil and paraffin section there is no change of price, except in the case of paraffin spirit (naphtha) which has dropped a penny per gallon. The manager of the Standard Oil Company of America, now in this country, has been in friendly communication with the Scotch Companies with the view of a renewal of the scale and wax agreement, ruptured two-and-a-half years ago under stress of market conditions. An advance of a farthing per lb. is talked of, if the market will bear it, but nothing is settled. Meanwhile, rather too much is being made of the matter in newspaper paragraphs, as if the proposal meant salvation complete for the Scotch industry. It is very far from that, even if carried through.

Chief prices current are:—Soda crystals, 35s. nett, Tyne; soda ash, 48/52°, £3. 17s. 6d. to £4. 5s. nett, Tyne; white alkali,

48/52°, £4. 10s. to £5. 5s. nett, Tyne; alum in lump, £5. 10s. nett, Glasgow; caustic soda, white, 74° £9., 70/72° £8., 60/62° £7., and cream 60/62° £7., all nett, Liverpool; bleaching powder, £7. 5s., nett, Tyne; saltcake, 17s. 6d.; borax, English refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½ d. nett, for Scotch and English deliveries (for export, 4¼ d. nett, f.o.b. Glasgow); bichromate of soda, 3¼ d. nett, for Scotch and English deliveries (for export, 3½ d. nett, f.o.b. Glasgow); chlorate of potash, 5¼ d. less 5%, Liverpool; nitrate of soda, 9s.; sulphate of ammonia, £11. to £11. 2s. 6d. prompt, f.o.b. Leith; sal-ammoniac, first and second white, £39. and £37. nett, any port; sulphate of copper, £15. 10s. less 5%, Liverpool; paraffin scale, hard 1¾ d., and soft, 1¾ d. to 2d. per lb.; paraffin wax 120° semi-refined, 2½ d.; paraffin spirit (naphtha), 6d. per gallon; paraffin oil (burning), standard No. 1 grade, 4¼ d. at works, for Scotch buyers (English sales, ½ d. to ¾ d. lower); ditto (lubricating) 865° £4. 5s.; 885° £4. 10s., and 890/895° £5. to £5. 10s. Week's imports of sugar at Greenock were nil.

New Companies.

1895 Tar Products Sales Committee, Ltd.—CAPITAL, £95,000., in shares of £1. each. This company has been formed to carry on the business of dealers in tar and tar products. The subscribers to the memorandum of association are: S. B. Boulton, 64, Cannon-street, E.C., merchant; J. B. Haywood, 64, Cannon-street, E.C., merchant; F. A. Labouchere, 23, College-hill, E.C., secretary; F. H. Capron, 47, Cornhill, E.C., solicitor; W. H. Rickard, 13, Devonshire-crescent, S.E., solicitor's clerk; J. Wilson, 289, Wick-road, N.E., shorthand writer; F. Legg, 117, Chestnut-avenue, Forest Gate.

Banford Bleachworks Co., Ltd.—CAPITAL, £15,000., in £10. shares. This company has been formed to carry on in all their branches the trades of bleachers, dyers, printers, and finishers of all kinds of goods, and to make bleaching, dyeing, printing, and finishing materials, etc. The subscribers to the memorandum of association are: W. M. Sinton, Laurel Vale, Tandragee, merchant; T. Sinton, Laurel Vale, Tandragee, merchant; A. H. Sinton, Laurel Vale, Tandragee, merchant; D. A. Sinton, Laurel Vale, Tandragee, merchant; F. B. Sinton, Laurel Vale, Tandragee, merchant; D. H. Sinton, Laurel Vale, Tandragee, spinster; E. Sinton, Laurel Vale, Tandragee, widow.

Donald Macpherson and Co., Ltd.—CAPITAL, £10,000., in £1. shares (9,998 ordinary and 2 founders'). This company has been formed to acquire and develop the business heretofore carried on in Manchester and elsewhere under the firm of Donald Macpherson and Co., as merchants and dealers in, and manufacturers of, paint, oils, pigments, etc. The subscribers to the memorandum of association are: D. D. Macpherson, Rock Cottage, Old Colwyn, manufacturer; E. Macpherson, Rock Cottage, Old Colwyn, married woman; H. P. Macpherson, St. James's Mount, Liverpool, spinster; A. Barlow, Holmea, Lymm, spinster; S. W. Tamplin, 10, Radnor-place, Liverpool, chemist; F. A. Tamplin, Conyers-road, Streatham, shipowner; T. W. Tamplin, Streatham Park, shipowner.

Charles Norrington and Co., Ltd.—CAPITAL, £100,000., in £100. shares. This company has been formed to acquire and carry on the business of manufacturers of sulphuric acid, chemical manures, etc., now carried on by Charles Norrington, at Plymouth, under the style of Charles Norrington and Co. The subscribers to the memorandum of association are: C. Norrington, Abbotshfield, Plymouth, manufacturer; A. R. Norrington, Rowden Hartley, Plymouth, manufacturer; P. L. Norrington, Abbotshfield, Plymouth, manufacturer; A. L. Hastings, 6, John-street, Stratford-on-Avon, married woman; M. M. Norrington, Plymouth, married woman; F. G. Norrington, Plymouth, spinster; E. S. Norrington, Plymouth, spinster.

William Metcalf, Ltd.—CAPITAL, £32,000., in shares of each. This company has been formed to carry on the business of chemical manufacturers, gasmakers, cokemakers, tar distillers, manufacturers of tar products. The subscribers to the memorandum of association are: W. Metcalf, Stanhill House, Oswaldtwistle, tiller; S. Jackson, Aspiden House, Oswaldtwistle, manager; Jackson, Aspiden House, Oswaldtwistle, married woman; A. Oswaldtwistle, chemist; A. Kitchen, 33, Blackburn-road, C. manager; S. Carnie, 33, Blackburn road, Church, cashier; J. H. son, The Hollies, Park-crescent, Blackburn.

Crawford Cutch Co., Ltd.—CAPITAL, £15,000., in shares each. This company has been formed to carry on the business of manufacturers of tanning extracts for staining, chemical, and purposes. The subscribers to the memorandum of association are: R. Meldrum, 87, West Regent-street, Glasgow, solicitor; J. L. 87, West Regent-street, Glasgow, solicitor; A. M. Lindsay, 87, Regent-street, Glasgow, solicitor; G. Braidwood, 16, Derby-Glasgow, clerk; W. Davidson, 401, St. Vincent-street, Glasgow, clerk; C. C. Taylor, 158, Raeberry-street, Glasgow, cashier; Dennison, 381, St. George's-road, Glasgow, clerk.

The Patent List.

This list is compiled from Official sources in the *Manual of Technical Laboratory*, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT

Improvements in Paints or Driers. F. Crane. 414. January 7.
Preventing and Removing Boiler Incrustations. J. Mackintosh. January 7.
Manufacture of Carbonic Acid Gas. H. Lane and J. Pullman. 499.
Treating Blast Furnace Slag. T. Hydes. 465. January 8.
Manufacture of Rubber. F. Ellershausen. 478. January 8.
Smelting Manganese Ores. N. Devisse. 568. January 9.
Obtaining Chlorine and Zinc from Blende and other Ores. H. N. and C. Gelstharp. 584. January 9.
Evaporating Saccharine Solutions. T. W. T. Carran. 603. January 9.
Producing Murate of Ammonia from Galvanizers' Skimmings. Parnell. 609. January 10.
Evaporating Apparatus. J. Foster. 617. January 10.
Manufacturing Pure Dextrose. Export and Lagerhaus-Gesellschaft. January 10.
Artificial Stone and Enamel. G. F. Thomson. 641. January 10.
Filtering Apparatus. J. Pinfold. 695. January 11.
Electrolytic Extraction of Nickel and Cobalt from Ferruginous Materials. L. Münzing. 712. January 11.
Transforming Oxygen into Ozone. M. Otto. 748. January 11.
Improved Disinfectant. S. A. Vasey. 788. January 12.
Electrolytic Decomposition of Alkaline Chlorides. W. Siepermann. 807. January 12.
Producing Gaseous Ammonia by Electricity. R. W. Hill. 816. January 12.
Producing Nitric Acid by Electricity. R. W. Hill. 817. January 12.

Gazette Notices.

PARTNERSHIP DISSOLVED.

C. WHITFIELD and N. FIELD, under the style of the Stourbank Farm Marl Co. and the Ravenscliff Brick and Marl Co., Ravenscliff, near Tamworth.

BANKRUPTCY ACTS, 1883 and 1890.

Receiving Orders.

FAITHFULL, JAMES BARTON, Fenchurch-street, E.C., colour merchant.
STEVENS, WM. G., trading as Joseph Thomas, Paignton, chemist and druggist.

Adjudications.

WHITE, JOHN FRANCIS, late Littleboro' and Rochdale, oil merchant.
GOOD, A. F., and GOOD, MILLCENT, described in receiving order as Good and Sons (trading as Henry Good and Sons), Phipps-street, E.C., oil and colour merchants.

IMPORTS OF CHEMICAL PRODUCTS

AT THE PRINCIPAL PORTS OF THE UNITED KINGDOM

LONDON.

Week ending January 12th.

Acetate of Lime—
U. States, 244 pkgs. Lister & Biggs
Acetic Acid—
Holland, 17 pkgs. Baresford & Co.
" 4 A. & M. Zimmermann
Acetone—
Holland, 6 pkgs. A. & M. Zimmermann

Alkali—
France, 220 c. Arnati & Harrison
Germany, 12 pkgs. L. & I. D. Jt. Co.
Belgium, 220 c. Arnati & Harrison
Alum—
Holland, 15 pkgs. Ohlenschläger Brs.
Aluminium—
Japan, 32 t. H. Merry & Son
Queensland, 10 L. & I. D. Jt. Co.
A. Turkey, 9 French & Smith

Anthracene—
France, 249 pkgs. Burt, Boulton, & Co.
Antimony—
Queensland, 8 t. Stobbs, Wilson, & Co.
Antimony Ore—
Japan, 32 t. H. Merry & Son
Queensland, 10 L. & I. D. Jt. Co.
A. Turkey, 9 French & Smith

N'castle, N.S.W., 20 t. H. Merry & Son
Sydney, 20 t. H. Merry & Son
Japan, 105 t. H. Merry & Son
" 30 t. H. Merry & Son
Asbestos—
Canada, £330 t. H. Merry & Son
Italy, 600 t. H. Merry & Son
" 24 t. H. Merry & Son
" 79 t. H. Merry & Son
" 700 t. H. Merry & Son

Mercuric Chloride — Germany, 11 pkgs. Petri Bros.	China , 506 Siam , 249 E. Indies , 473	Union L. Co. E. Boustead & Co. S. Barrow & Bro., Ltd.	Phosphate Rock — Belgium, 90 t. Anglo-Cont. Guano Wks.	Wolfram Ore — Queensland, 30 t. L. & I. D. Jt. Co.
Barytes — Holland, 21 cks. S. H. Willoughby	Indigo E. Indies, 1 ckt. Langstaff & Co.		" 175 Odam's Chemical Manure Co.	Wood Pulp — Holland, 14,166 pkgs. Furness, Withy, & Co.
" 21 J. L. Lyon & Co.	" 65 Patry & Pasteur		" 50 C. & A. H. Nichols	France, 1,200 Tough & Henderson
" 127 W. Harrison & Co.	" 21 Elkan & Co.		" 230 West & Penrose	Norway, 654 W. G. Taylor & Co.
Germany, 19 S. H. Willoughby	" 40 Langstaff & Co.		" 74 cks. B. Gallaway	" 1,576 Johnson & Jorgensen
Holland, 74 Magee, Taylor, & Co.	" 678 L. & I. D. Jt. Co.		U. States, 500 pkgs. Rosenberg, Loewe & Co.	" 809 W. G. Taylor & Co.
Belgium, 42 J. L. Lyon & Co.	" 16 Walker, Munsie, & Co.		Ceylon, 364 cks. J. Thredder, Son, & Co.	" 1,191 E. J. & W. Goldsmith
Nitro Toluol — Holland, 6 pkgs. J. Owen	" 9 Parsons & Keith			Holland, 1,411 W. Friedlander
Lactic Acid — Italy, 12 pkgs. City Coml. Wf., Ltd.	" 10 L. & N.-W. Ry. Co.			Germany, 406 W. Balchin
	" 5 Dipnall & Co.			Holland, 270 Ekman Pulp and Paper Co.
	" 14 J. Owen			Portugal, 200 Page Son, & East
Amphor — Japan, 25 pkgs. Beresford & Co.	Logwood B. Honduras, 153 t. Belize Estate Co.		Potash — U. States, 22 c. S. Ward & Co.	" 400 L. Knoblauch
" 62 R. Warner & Co., Ltd.	Myrobolams E. Indies, 1,400 pkgs. Darling Bros.		France, 130 F. W. Berk & Co.	
" 4 tubs. L. & I. D. Jt. Co.	" 620 L. & I. D. Jt. Co.		" 125 Petri Bros.	
Caoutchouc — Madagascar, 40 c. Hammond & Co.	" 1,337 Baxter & Hoare		Potassium and Sodium Bi-carbonate — Holland, 32 c. A. & M. Zimmermann	Zinc Oxide — Germany, 25 brls. M. Ashby, Ltd.
Ceylon, 5 Kleinwort, Sons, & Co.	" 1,473 W. Shelcott		France, 40 c. J. A. Reid	Holland, 25 "
U. States, 42 E. A. Hunt	Saffron Spain, 1 pkge. C. Brumlen & Sons		Germany, 100 Fellows, Morton, & Co.	
Zanzibar, 120 L. & I. D. Jt. Co.	" 1 H. R. Boyer		Holland, 50 J. Greig	
France, 98 Wallace Bros.	Shumac Italy, 100 pkgs. Fisher, King, & Co.		" 240 Beresford & Co.	
Peru, 3 Girard & Co.	" 450 Beresford & Co.		Potassium Chloride — Germany, 508 pkgs. Bessler, Waechter, & Co.	
Belgium, 1 Leach & Co.	" 14 J. Terry & Co.			
P. E. Africa, 37 H. Kiver & Co.	Tanner's Bark Natal, 57 t. A. & W. Nesbitt		Potassium Cyanide — Germany, 2 pkgs. Evans, Lescher, & Co.	
E. Indies, 234 E. Boustead & Co.	Adelaide, 31 Becker & Ulricht			
" 97 L. & I. D. Jt. Co.	Farina — Germany, 844 pkgs. Ohlenschlager Bros.		Potassium Hydrate — Germany, 40 pkgs. Spies Bros. & Co.	Acetate of Lime — New York, 1,674 bgs.
Madagascar, 1 "	" 200 C. Tennant, Sons, & Co.		Potassium Oxymuriate — Sweden, 10 pkgs. G. Boor & Co.	Acetic Acid — Rotterdam, 17 cbys.
Germany, 442 T. H. Lee	" 50 Hernu, Peron & Co.		Potassium Permanganate — Holland, 10 pkgs. G. Rahn & Co.	Acid — Hamburg, 1 cs.
" 57 C. S. Lovell	French Chalk — Italy, 4,300 W. Harrison & Co.		Pumice Stone — Italy, 2 t. Stobbs, Wilson, & Co.	Albumen — Hamburg, 1 cs.
" 18 L. & I. D. Jt. Co.	France, 40 C. F. Gerhardt		Holland, 1 J. Barber & Co.	Aniline Colours — Rotterdam, 14 cs.
A. Turkey, 3 L. & I. D. Jt. Co.	France, 50 W. Harrison & Co.		Rosin — Holland, 5 brls. Philipps & Graves	Antimony — Oporto, 16 cks. C. Leite
Madagascar, 200 Procter Bros.	Glucose — Germany, 300 pkgs. 300 c. Baxter & Hoare		Salammoniac — Holland, 18 pkgs. Philipps & Graves	Barytes — Rotterdam, 18 cks.
Castor Oil — Italy, 15 pkgs. A. & M. Zimmermann	" 25 199 c. Chmbln's Wf. Co.		Saltpetre — E. Indies, 995 bgs. Lucas & Spencer's Wf., Ltd.	Antwerp, 40 bgs.
France, 56 brls. J. Greig	" 200 200 Trier, Meyer & Co.		Germany, 40 cks. J. Hall & Sons	Bone Ash — River Plate, 210 bgs. H. Brown
Italy, 25 cs. A. Laming & Co.	" 25 203 Pillow, Jones & Co.		" 50 Chilworth Gunpowder Co.	B. Ayres, 168 W. B. Dickenson
France, 20 brls. Lucas & Spencer's Wf., Ltd.	U. States, 3,999 5,869 L. Suro & Co.		E. Indies, 183 P. Hecker & Co.	Campana, 287
Belgium, 168 Fuertst Bros.	" 1,704 3 054 R. G. Hall & Co.		Sodium Hypsulphite — Germany, 186 pkgs. F. Boehm	Borate of Lime — Antofagasta, 650 bgs.
France, 70 Snowdon, Sons, & Co.	" 250 250 Ohlenschlager Bros.		Starch — Holland, 1,299 pkgs. Little & Johnston	Borax — Valparaiso, 1,324 sks.
Caustic Potash — France, 10 c. 20 drs. Spies Bros. & Co.	" 200 1,300 T. M. Duche & Sons		" 20 G. Rahn & Co.	Havre, 705
" 176 Carey & Sons	" 4,100 4,100 Fellows, Morton & Co.		" 200 M. Benschner	Castor Oil — Calcutta, 54 cs.
Belgium, 100 Petri Bros.	" 1,000 1,000 Beresford & Co.		Germany, 135 Philipps & Graves	Chemicals (otherwise undescribed) Hamburg, 1 cs.
Chemicals (otherwise undescribed) Germany, 44 pkgs. T. H. Lee	" 100 600 Deering & Robottom		Belgium, 40 F. Claydon & Co.	Stockholm, 4 cks. W. H. Stott & Co.
" 1 Philipps & Graves	" 500 500 Humphrey & Co.		" 120 F. Sawyer, Sons, & Co.	Chrome Ore — New York, 25 bxs. Sanderson Bros. & Co.
" 47 A. & M. Zimmermann	" 500 500 A. Dawson & Co.		" 493 A. B. Curtis & Co.	
" 17 Craven & Co.	" 34 34 G. Hedges & Sons		" 200 Magee, Taylor, & Co.	Colours — Hamburg, 10 cks. 12 cs.
" 21 A. Willcox	" 100 100 Barrett, Tagant & Co.		" 400 Prop. Scott's Wf.	Antwerp, 4 33
Belgium, 7 O. Scholzig	Infusorial Earth — Germany, 435 W. Byford		Tartaric Acid — Holland, 5 pkgs. B. & F. Wf. Co.	Cottonseed Oil — New York, 100 brls.
" 3 T. Palmer	Manganese Ore — Japan, 290 t. C. May		France, 290 bgs. G. Boor & Co.	Cream of Tartar — Rotterdam, 2 cks.
Holland, 11 T. H. Lee	Manure — France, 50 t. J. Burnett & Sons		Belgium, 110 Walbaum & Tosetti	Disinfectants — New York, 5 cs. T. J. Montgomery
U. States, 25 A. P. Morris	Germany, 55 Humphrey & Co.		Italy, 47 H. Hill & Sons	Dried Blood — Campana, 181 bgs.
Copperas — Germany, 14 pkgs. City Coml. Wf., Ltd.	E. Indies, 500 A. Hunter & Co.		Holland, 3 C. F. Gerhardt	Dyestuffs — Valparaiso, 70 bgs. A. W. Read
Cream of Tartar — France, 19 pkgs. B. & F. Wf. Co.	Sydney, 5 G. S. Yuill & Co.		" 6 F. C. Devon & Co.	Algarrobbia Hamburg, 107 bgs.
Holland, 5 M. Ashby, Ltd.	Belgium, 230 West & Penrose		Turpentine — Austria, 42 Major & Field	Divi Divi New York, 82 bxs. 15 brls.
" 18 Kirkpatrick & Co.	Holland, 250 Anglo-Cont. Guano Wks.		" 5 cs. Hernu, Peron, & Co.	Extracts Berdeaux, 200 cks.
Dextrine — Holland, 60 pkgs. Beck & Pollitzer	Sydney, 150 A. Hunter & Co.		Yarnish — U. States, 153 pkgs. Pinchin, Johnson, & Co.	Indigo Calcutta, 103 cts.
Dyestuffs — Argols Italy, 420 pkgs. B. Jacob & Sons	Mica — E. Indies, 4250 W. M. Smith & Sons		White Lead — Belgium, 27 cks. J. L. Lyon & Co.	Sumac New York, 7 bgs. W. G. Turner & Co.
Cape, 13 Findlary, Durham, & Co.	Ochre — France, 40 cks. J. L. Lyon & Co.		" 17 Burrell & Co.	Valonia Bordeaux, 400 bls.
Cochineal Canaries, 15 pkgs. W. M. Smith & Sons	Ozokerit — Germany, 66 pkgs. L. Schotzen & Co.		France, 43 W. Harrison & Co.	Syria " 700 bgs. G. T. Scrin
Cutch Rangoon, 114 pkgs. Arracan Co., Ltd.	Paraffin Wax — U. States, 200 brls. H. Hill & Sons		Holland, 79 T. & W. Farmiloe	" 220 A. C. Cozzifac
E. Indies, 700 Anderson, Weber, & Smith	" 281 Mordaunt Bros.		Germany, 27 S. H. Willoughby	Smyrna, 4,812
Rangoon, 233 A. Howden & Co.	" 65 W. Balchin		" 26 N. J. Fenner & Co.	Constantinople, 1,131
" 200 Hale & Son	Rangoon, 806 H. Hill & Sons		" 19 Randall Bros.	
" 100 A. B. Curtis & Co.	U. States, 3,605 Anglo-American Oil Co.		Holland, 100 Burrell & Co.	
Extracts Denmark, 1 pkge. Pickford & Co.				
U. States, 50 "				
France, 50 W. Burton & Sons				
" 50 Prop. Chmbln's Wf., Ltd.				
" 288 L. J. Levinstein & Sons				
Denmark, 2 Bailey & Leetham				
France, 180 Carey & Sons				
Gambler E. Indies, 275 pkgs. Adamson, Gillfillan, & Co.				
" 742 R. & J. Henderson				
" 314 E. Boustead & Co.				
" 326 Brinkmann & Co.				
" 441 L. & I. D. Jt. Co.				

LIVERPOOL.

Week ending January 10th.

Glucose—		
New York,	599 brls.	
Hamburg,	5 cks.	
Stettin,	423 cks.	Browne, Geveke & Co.
Guano—		
B. Ayres,	1,354 bgs.	Williamson, Milligan & Co.
M. Video,	3	"
Manganese Ore—		
Coquimbo,	qty.	
Paint—		
Boston,	50 cs.	
Paraffin Scale—		
New York,	599 brls.	Standard Oil Co.
"	1,385	
Phosphates—		
Ghent,	2,000 bgs.	
Dunkirk,	500 t.	
Phosphate Rock—		
Brunswick, Ga.,	355 t.	W. H. Stead & Co.
PL. Royal, S. C.,	2,150 t.	Phospho Guano Co.
Phosphoric Acid—		
Hamburg,	12 cs.	
Potash—		
Dunkirk,	2 cks.	37 dms.
Potassium Cyanide—		
Hamburg,	10 cs.	
Pyrites—		
Huelva,	3,107 t.	Matheson & Co.
Saltpetre—		
Calcutta,	191 bgs.	Ralli Bros.
Hamburg,	50 kgs.	
Soap—		
New York,	35 brls.	
"	1 cs.	W. Cuthbertson
"	6	F. Weeks & Co.
Starch—		
Hamburg,	152 cs.	
Rotterdam,	61	
Antwerp,	108	J. T. Fletcher & Co.
"	162	
Stearine—		
New York,	25 hds.	Co-op. W'sale Society, Ltd.
Antwerp,	23 bgs.	
Superphosphate—		
Antwerp,	100 bgs.	
Tallow—		
River Plate,	40 pps.	H. Brown
Zarate,	371	J. Nelson & Sons, Ltd.
Tartar—		
Bordeaux,	15 cks.	
Valparaiso,	14 sks.	Munch & Droste
Havre,	30	Burgoyne, Burbridge
Tartaric Acid—		
Bordeaux,	1 ck.	
Havre,	1 kg.	Evans, Sons & Co.
Treacle—		
New York,	695 brls.	
Ultramarine—		
Rotterdam,	10 cs.	4 cks.
Hamburg,	6	
Varnish—		
New York,	33 brls.	Pinchin, Johnson & Co.
White Lead—		
Rotterdam,	67 cks.	
Wood Pulp—		
Christiania,	3,100 bls.	
Drammen,	239	
Skien,	2,105	
Portland,		310 bls.
Hamburg,	211	120 pkgs.
Zinc Oxide—		
Rotterdam,	50 cks.	
Antwerp,	15	
Zinc White—		
Rotterdam,	10 cks.	

MANCHESTER.

Week ending January 12th.

Acetic Acid—		
Rotterdam,	2 cks.	
Aluminous Cake—		
Rotterdam,	40 bgs.	Simpson, Howden, & Co.

Chemicals (otherwise undescribed)

Stockholm,	4 cks.	
Rouen,	47	
Hamburg,	3 cs.	
Chromium Chloride—		
Rotterdam,	5 brls.	Simpson, Howden, & Co.
Cod Oil—		
Christiania,	6 brls.	
Colours—		
Rotterdam,	8 cs.	19 cks.
Treport,	11	3 bxs.
Rotterdam,	19	31 brls.
"	13 cs.	Simpson, Howden, & Co.
"	2	6 cs.
Copperas—		
Hamburg,	31 cks.	
Dyestuffs—		
Alizarine		
Rotterdam,	29 cks.	
Extracts		
Treport,	20 cks.	
Indigo		
Rotterdam,	10 cs.	Simpson, Howden, & Co.
Farina—		
Hamburg,	110 bgs.	
Stettin,	70	
Glucose—		
Stettin,	434 cks.	
Limestone—		
Antwerp,	1 cs.	1 crt.
Magnesia—		
Stettin,	4 cks.	
Oxygen Water—		
Treport,	14 cbys.	
Pitch—		
Hamburg,	60 cks.	
Potash—		
Hamburg,	15 cks.	
Potassium Carbonate—		
Hamburg,	13 cks.	
Potassium Chlorate—		
Antwerp,	12 cks.	
Potassium Sulphate—		
Rotterdam,	100 cks.	Simpson, Howden, & Co.
Saltpetre—		
Hamburg,	1 ck.	
Sodium Acetate—		
Treport,	14 cks.	
Starch—		
Rotterdam,	5 cks.	
Antwerp,	40 cs.	
Stearine—		
Antwerp,	4 bgs.	
Tartar—		
Bordeaux,	1 ck.	
Hamburg,	8	
Tartar Emetic—		
Hamburg,	8 cks.	
Tartaric Acid—		
Rotterdam,	2 brls.	Simpson, Howden, & Co.
Ultramarine—		
Rotterdam,	15 cs.	4 cks.
Hamburg,	10 cks.	Simpson, Howden, & Co.
Wood Pulp—		
Rotterdam,	22 bls.	
Gothenburg,	2,302	
Christiania,	240	
Gefle,	3,841	
Halmstadt,	1,645	
Laurvig,	60	
Sannesund,	3,726	
Stettin,	2,040	
Wood Spirit—		
Hamburg,	1 dm.	
Zinc Ashes—		
Antwerp,	5 cks.	
Zinc Oxide—		
Rotterdam,	73 brls.	Simpson, Howden, & Co.
Zinc White—		
Rotterdam,	5 cks.	

HULL.

Week ending January 12th.

Acid—		
Bari,	40 cks.	Wilson, Sons, & Co., Ltd.
"	1	
Rotterdam,	4	Hutchinson & Son
Alkali—		
Bremen,	2 cs.	Veltmann & Co.

Aniline—		
Hamburg,	2 cks.	Wilson, Sons, & Co., Ltd.
Arsenic—		
Hamburg,	2 kgs.	Wilson, Sons, & Co., Ltd.
Asbestos—		
Riga,	400 bgs.	Wilson, Sons, & Co., Ltd.
Barytes—		
Rotterdam,	23 cks.	W. & C. L. Ringrose
Antwerp,	100 bgs.	Bailey & Leatham
Bone Meal—		
Bombay,	2,875 bgs.	
Kurrachee,	499	
Castor Oil—		
Trieste,	20 cs.	Wilson, Sons, & Co., Ltd.
Chemicals (otherwise undescribed)		
Stettin,	28 cks.	Wilson, Sons, & Co., Ltd.
Bremen,	2	Veltmann & Co.
Antwerp,	10 dms.	Wilson, Sons, & Co., Ltd.
Dunkirk,	83 pks.	Wilson, Sons, & Co., Ltd.
Cod Oil—		
Drontheim,	15 brls.	Wilson, Sons, & Co., Ltd.
Aalesund,	15 cks.	"
Colours—		
Rotterdam,	4 cs.	35 pks.
"	6	27 26 cks.
"		Hutchinson & Son
Copenhagen,	1 cs.	Wilson, Sons, & Co., Ltd.
Bremen,	4 cks.	J. & T. Seddon
New York,	2 brls.	8 pks.
Ghent,	2	Wilson, Sons, & Co., Ltd.
"	9 cks.	
Hamburg,	15 cs.	G. Malcolm & Son
Antwerp,	4 brls.	Wilson, Sons, & Co., Ltd.
"	200 bgs.	42 cks.
Cream of Tartar—		
Rotterdam,	2 cks.	W. & C. L. Ringrose
Dyestuffs—		
Alizarine		
Rotterdam,	14 brls.	Hutchinson & Son
"	65 cks.	W. & C. L. Ringrose
Myrabolams		
Bombay,	5,247 bgs.	
Sumac		
Palermo,	200 bgs.	Wilson, Sons, & Co., Ltd.
"	200	
Farina—		
Stettin,	248 bgs.	Wilson, Sons, & Co., Ltd.
Ghent,	92 bxs.	"
Glucose—		
Rotterdam,	60 bgs.	Hutchinson & Son
New York,	250 brls.	
Kaolin—		
Rotterdam,	122 bgs.	Hutchinson & Son
Ozokerit—		
Stettin,	320 bgs.	Wilson, Sons, & Co., Ltd.
Phosphate—		
Ghent,	1,810 bgs.	
Pitch—		
Rotterdam,	6 brls.	Hutchinson & Son
Potash—		
Rotterdam,	11 dms.	W. & C. L. Ringrose
Rosin—		
Savannah,	750 brls.	
Saltpetre—		
Hamburg,	1 ck.	Bailey & Leatham
Soap—		
Bari,	62 cs.	Wilson, Sons, & Co., Ltd.
"	27	
Riga,	19	"
Soda—		
Rotterdam,	7 cks.	Hutchinson & Son

Sodium Nitrate—		
Rotterdam,	8 cks.	W. & C. L. Ringrose
Hamburg,	50 kgs.	Wilson, Sons, & Co., Ltd.
Starch—		
Bremen,	1,060 cs.	Veltmann & Co.
Stearine—		
Antwerp,	18 pks.	Wilson, Sons, & Co., Ltd.
Tin Oxide—		
Rotterdam,	7 cks.	Hutchinson & Son
Treacle—		
Bergen,	1 ck.	Wilson, Sons, & Co., Ltd.
New York,	1,675 brls.	"
Turpentine—		
Savannah,	2,962 brls.	
Libau,	50	
Ultramarine—		
Rotterdam,	1 ck.	Hutchinson & Son
Varnish—		
New York,	34 pks.	Wilson, Sons, & Co., Ltd.
White Lead—		
Rotterdam,	77 cks.	W. & C. L. Ringrose
Antwerp,	57	Bailey & Leatham
Rotterdam,	6	Hutchinson & Son
Wood Pulp—		
Hango,	125 bls.	J. Good & Son
"	46	Furley & Co.
"	79	

GLASGOW.

Week ending January 17th.

Acetic Acid—		
Gothenburg,	2 cbys.	
Aniline—		
Rotterdam,	5 brls.	J. Rankine & Son
Arachide Oil—		
Rotterdam,	2 cks.	J. Rankine & Son
"	4	
Asbestos—		
Boston,	460 bgs.	
Barytes—		
Rotterdam,	45 cks.	J. Rankine & Son
"	83 pks.	
Barytes Sulphate—		
Antwerp,	100 bgs.	21 cks.
Chemicals (otherwise undescribed)		
Rotterdam,	20 kgs.	
Colours—		
Antwerp,	4 cks.	
Rotterdam,	6 bxs.	J. Rankine & Son
"	32 pkgs.	
Dyestuffs—		
Alizarine		
Rotterdam,	66 brls.	J. Rankine & Son
"	51 pkgs.	
Indigo		
Rotterdam,	6 cs.	
Shumac		
New York,	60 bgs.	
Glucose—		
New York,	210 brls.	
Lamp Black—		
Gothenburg,	5 brls.	
Naphthaline—		
Rotterdam,	1 ck.	J. Rankine & Son
Potash—		
Rotterdam,	20 cks.	J. Rankine & Son
Rosin—		
New York,	503 brls.	
Baltimore,	1,550	
Starch—		
Antwerp,	20 cs.	
Sulphur Ore—		
Seville,	295 t.	Seville Sulphur & Copper Co., Ltd.
Varnish—		
New York,	137 brls.	
Waste Salt—		
Hamburg,	615 bgs.	
Wood Pulp—		
Gothenburg,	342 bls.	
Christiania,	320	

Zinc Oxide—
Antwerp, 25 cks.
Zinc White—
Rotterdam, 24 cks.

TYNE.*Week ending January 12th.*

Alum Earth—
Hamburg, 18 cks. Tyne S. S. Co.
Aluminium—
Antwerp, 1 cs. Tyne S. S. Co.
Barytes—
Rotterdam, 200 bgs. Tyne S. S. Co.
Antwerp, 500 "
Paint—
Hamburg, 2 cks. Tyne S. S. Co.

Saltpetre Salt—
Hamburg, 340 t.
Starch—
Rotterdam, 18 cs. Tyne S. S. Co.
Wood Pulp—
Christiania, 320 pkgs.

GOOLE.*Week ending January 9th.*

Alkali—
Hamburg, 4 cks.
Alum—
Rotterdam, 50 bgs.
Antimony—
Boulogne, 4 cks.
Barytes—
Rotterdam, 29 cks.

Colours—
Hamburg, 1 ck.
Dyestuffs—
Alizarine
Rotterdam, 15 pkgs.
Extracts
Ghent, 116 cks.
Fustic
Hamburg, 601 lgs.
Dyestuffs (otherwise undescribed)
Boulogne, 6 cks. 2 cs.
Rotterdam, 24 pkgs.
Farina—
Hamburg, 100 bgs.
Potash—
Dunkirk, 30 dms. 6 cks.
Calais, 36
Rotterdam, 10
Saltpetre—
Antwerp, 71 bgs.

Waste Salt—
Hamburg, 242 cks.
Zinc Oxide—
Antwerp, 25 cks.

GRIMSBY.*Week ending January 12th.*

Aniline Dyes—
Rotterdam, 2 cks.
Antwerp, 4 53 pkgs.
Caoutchouc—
Hamburg, 32 bgs. 4 cs.
Chemicals (otherwise undescribed)
Hamburg, 10 cs.
Colours—
Hamburg, 4 pkgs. 11 cks 3 cs.
Antwerp, 92 3
Zinc Ashes—
Antwerp, 4 cks.

EXPORTS OF CHEMICAL PRODUCTS

OF

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.**LONDON.***Week ending January 16th.*

Acids—
Calcutta, 5 cs. £17
Singapore, 1 3
Hong Kong, 20 16
Santos, 20 340 pkgs. 163
Alkali—
Shanghai, 1 c. £3
Sydney, 5 t. 15 33
Alum—
Pt. Elizabeth, 10 cks. £1
Nelson, 2 c. 2
Batoum, 10 t. 60
Ammonia—
Sydney, 10 cs. £20
Ammonium Carbonate—
Dunkirk, 18 c. £29
Rouen, 2 t. 70
New York, 9 19 300
Yokohama, 2 10 82
Trepport, 4 12 145
Bombay, 4 13 20
Paris, 2 5 72
Odessa, 4 19 170
Ammonium Chloride—
Libau, 1 t. 5 c. £32
Ghent, 3 cks. 24
Pt. Lagos, 10 18
Melbourne, 1 27
Ammonium Sulphate—
Antwerp, 10 t. £110
Ghent, 58 646
Rotterdam, 12 170
Ostend, 60 715
Hamburg, 100 1,200
Newport News, 103 2 c. 1,088
Amorphous Phosphorus—
Malta, £13
Arsenic—
Sydney, 5 t. £75
Melbourne, 2 10 c. 40
Bisulphite of Lime—
Rouen, 6 cks. £13
Borax—
B. Ayres, 9 c. £13
Carbolic Acid—
Santos, 9 c. £12
Marseilles, 19 t. 12 247
Antwerp, 20 cs. 29
Sydney, 7 25
Rouen, 15 cks. 33
Carbonic Acid—
Adelaide, 4 cks. £11
Carbonic Acid Gas—
Bordeaux, 14 tubes £28
Caustic Potash—
Sydney, 1 t. 6 c. £30
Caustic Soda—
Philadelphia, 29 t. £181
Santos, 10 3 c. 101
Napier, 5 2 43
E. London, 11 13
Pt. Elizabeth, 7 9
Algoa Bay, 10 12
Calcutta, 9 2
Sydney, 1 10 30
Chemicals (otherwise undes.)—
Savannah, 6 cs. £13

Melbourne, 5 kgs. 2 c. 34
Brisbane, 2 cs. 13
Bangkok, 1 14
Yokohama, 20 dms. 25 kgs. 241
Copenhagen, 19 c. 42
Natal, 9 12
B. Ayres, 1 t. 5 2 cs. 106
Bombay, 9 45
Calcutta, 1 32
Chloride of Lime—
Algoa Bay, 1 t. 10 c. £36
Citric Acid—
Bombay, 3 kgs. 2 c. £35
Rotterdam, 5 2 t. 10 340
Cadiz, 2 14
Adelaide, 3 19
Pretoria, 1 cs. 8
Karachi, 1 14
Seville, 15 89
Coal Products—
Alizarine
Boston, 20 cks. £280
Sydney, 3 47
Reval, 12 cs. 713
Aniline
Melbourne, 1 cs. £25
Aniline Dyes
Auckland, 1 cs. £9
Aniline Salts
Naples, 20 cks. £100
Anthracene
Merdingen, 34 cks. £343
Benzol
Rotterdam, 35 pns. 41 dms. £638
Creosote
Dieppe, 23,500 galls. £123
Naphthaline
Hamburg, 16 cks. £136
Hodeidah, 2 15
Nitro-Naphthaline
Brussels, 3 cks. £25
Paraffin Wax
Libau, 50 bgs. £100
Pitch
Boston, 650 brls. £435
Antwerp, 926 t. 1,723
Philadelphia, 2,697 bgs. 458
Dunkirk, 1,089 1,906
Tar
Aden, 20 cks. £14
Natal, 130 dms. 10
Calcutta, 50 rms. 62
Toluol
Boulogne, 41 cks. £180
Coal Products (otherwise undes.)—
Shanghai, 5 brls. £6
Malta, 5 6
Copperas—
Casablanca, 3 t. 17 c. } £11
Tangier, 1 11 }
Salonica, 20 18 } 37
Copper Sulphate—
Trepport, 20 t. 18 c. £332
Madeira, 10 8
Rotterdam, 5 2 72
Hobart, 25 415
Marseilles, 1 15 25
Sydney, 50 800
Copper Sulphide—
Stamboul, 2 c. £22
Galata, 2 29
Salonica, 1 20

Cream of Tartar—
Wellington, 18 c. £72
Auckland, 10 39
Sydney, 1 t. 69
Nelson, 5 19
Cyanide—
Transvaal, 10 cs. £170
Disinfectants—
Penang, 100 dms. £35
Madras, 17 pkgs. 23
Jamaica, 1 t. 16 c. 56
Cape Town, 80 dms. 130
Algoa Bay, 30 16 cs. 36
Dried Blood—
Paris, 10 t. 8 c. £80
Guano—
Morlaix, 300 t. £3,000
Trinidad, 20 200
Manure—
Cherbourg, 380 t. £1,355
Havre, 25 100
Barfleur, 94 682
Bordeaux, 25 125
Genoa, 98 10 c. 280
Rochefort, 182 600
Jersey, 271 12 1,946
Malaga, 33 13 278
Mauritius, 25 115
Vera Cruz, 1 50
Rouen, 19 19 120
Paris, 9 19 60
Oxygen—
Brussels, 8 c. £60
Phosphate of Lime—
Oporto, 10 c. £7
Phosphoric Acid—
Demerara, 35 cks. £129
Phosphorus—
Sydney, 11 cs. £110
Potash—
Sydney, 1 t. 2 c. £17
Potash Crystals—
Rouen, 1 cs. £20
Cape Town, 1 t. 2 c. 17
Melbourne, 1 10
Oporto, 2 cks. 19
Potassium Bichromate—
Melbourne, 10 c. £21
Potassium Chlorate—
Malta, 6 c. £14
Potassium Cyanide—
Brisbane, 20 cs. £108
Normanton, 1 t. 5 c. 166
Potassium Iodide—
Calcutta, 1 cs. £31
Potassium Prussiate—
Lisbon, 9 c. £44
Hamburg, 1 ck. 27
Saltpetre—
Calcutta, 13 c. £16
Santos, 6 t. 14 160
Rio de Janeiro, 63 17 1,499
Bahia, 5 11 133
Copenhagen, 1 1 23
Sheep Dip—
Sydney, 5 t. 7 c. £188
Adelaide, 100 cs. 275
Melbourne, 2 14 400 1,194
Geelong, 100 275
Invercargill, 10 15

Wellington, 100 pkgs. 150
Oamaru, 10 15
Lyttelton, 50 kgs. 75
E. London, 10 c. 21
Soda—
Boston, 6 t. 5 c. £29
Soda Alkali—
Launceston, 10 c. £43
Soda Ash—
Oamaru, 3 cks. £11
Soda Crystals—
Nelson, 1 t. 13 c. £4
Sodium—
Brisbane, 4 cs. £28
Sodium Bicarbonate—
Nelson, 3 24
Pt. Said, 12 c. 8
Hobart, 1 7
Sodium Carbonate—
E. London, 5 c. £5
Sodium Sulphate—
Ghent, 50 t. £50
Sulphur—
Aden, 4 t. 10 c. £42
Pt. Elizabeth, 50 cs. 17
Algoa Bay, 2 5 100 kgs. 74
Sulphuric Acid—
Colombo, 15 c. £15
Amsterdam, 2 12
Penang, 5 dms. 3 t. 12 22
New York, 3 10 70
Cape Town, 2 4 22
Algoa Bay, 4 10 40
Tartaric Acid—
Auckland, 5 c. £24
Sydney, 1 t. 10 179
Melbourne, 2 15 268
Bombay, 2 kgs. 10

LIVERPOOL.*Week ending January 16th.*

Acetic Acid—
Lisbon, 1 t. 2 c. 3 q. £10
Acids—
Mollendo, 2 q. £6
Albumen—
Boston, 1 t. 15 c. £30
New York, 2 1 124
Alum—
Santos, 1 t. 9 c. 2 q. £7
Sydney, 3 21
Alexandretta, 8 11 40
Scanderoon, 2 18 20
Alexandria, 4 9 31
Havana, 4 19 21
Constantinople, 2 14 13
Odessa, 5 2 25
Syra, 6 6 37
Talcuano, 2 15 1 13
Lisbon, 4 4 23
Ammonium Carbonate—
Genoa, 1 t. 10 c. £50
Venice, 1

Ammonium Chloride—

Smyrna,	1 t.	£38
Beyrout,	1 t.	30
Philadelphia,	20 13	2 q. 1,038
Kurrachee,	1 t.	45
Bombay,	1 t.	27
Alexandria,	5 t.	186
Genoa,	1 t.	5
Calcutta,	1 t.	24
New York,	1 t.	73
Alexandria,	5 t.	23
Rio de Janeiro,	1 t.	4

Ammonium Sulphate—

Gd. Canary,	3 t.	£59
Tarragona,	10 7 c.	113
Bucelona,	20 15	14
Genoa,	60 16	667
Bombay,	77	805
Leghorn,	60 13	716
Boston,	33	581
New York,	108 18	1,090
San Paulo,	24 19	388
Dovera,	211 4	383
Valencia,	27 3	1,043

Antimony—

Bomby, 4 cks.

Asbestos—

Rangoon, 1 cks.

Bleaching Powder—

Rice,	21 brls.
Bombay,	20 cks.
Boston,	539
Dunkirk,	20
Genoa,	200
Ghent,	74
Montreal,	20
New York,	377 40
Operto,	20
Puerto,	48
Calcutta,	2 cks.
Manila,	11
Philadelphia,	54
Baltimore,	33

Borate of Lime—

Flint, 60 t. £330

Borax—

Amoy,	2 t.	£20
Vera Cruz,	17 t. 3 q.	18
Cape Town,	4 t.	7
Tunis,	3 t.	3
Genoa,	7 t.	151
Boston,	8 t. 12	52
New York,	25 5	997

Calcium Chloride—

Baltimore, 4 t. 19 c. £11

Casotouch—

Rangoon, 1 cks.

Carbolic Acid—

Baltimore, 1 t. £13

Hamburg, 5 5 c. 340

Amoy, 1 3 q. 7

Caustic Potash—

New York, 7 t. 17 c. £220

Wellington, N.Z., 4 5

Caustic Soda—

Albion, 10 dms.

Amoy, 4 1/2

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Baltimore, 20

Seville, 85

Tunis, 15

Vera Cruz, 15

Wellington, 10

Chemicals (otherwise undesignated)

Boston, 3 t. 10 c. 2 q. £116

Hamburg, 8 cks. 5

M. Video, 8 cks. 40

Rio de Janeiro, 9 cks. 121

Odessa, 3 t. 10

Barcelona, 1 t. 6

Baltimore, 1 t. 4

Tribunado, 1 t. 19

Kurrachee, 1 t. 114

Calcutta, 35

Genoa, 20

Alexandria, 37

China Clay—

Barcelona, 10 t.

Bombay, 45

Boston, 495

Genoa, 10

Portland, Me., 100 cks.

Pierro, 150 bgs.

Naples, 26

Chlorate of Lime—

Callao, 8 c. 2 q. £4

Hong Kong, 6 t. 1

Chrome Ore—

Amoy, 2 t. 6 c.

Citric Acid—

R. Ayres, 2 t. 2 c. 2 q. £250

Coal Products—

Aniline Colours, 3 cks.

Aniline Oil, 5 dms.

Coal Tar Colours

Genoa, 3 c. £17

Pitch, 100 bks.

Alexandria, 1,181 t.

Certe, 645

La Rochelle, 445

Tar

Pt. Natal, 9 brls.

Sierra Leone, 60 kgs.

Para, 1 ck.

Philadelphia, 100

Copper Sulphate—

Rio de Janeiro, 11 c. 3 q. £10

Melbourne, 2 t. 30

Naples, 12 11 2 187

Tarragona, 31 1 552

Algers, 20 7 323

Pinto Alegre, 11 8

Lisbon, 14 19 3 217

Bordeaux, 10 6 1 150

Hamburg, 10 7

Christiania, 1 1 2 15

Palermo, 22 2 10

Alexandria, 22 2 313

Gothenburg, 2 8 1 30

Para, 4 3

Leghorn, 5 7 1 81

Marseilles, 104 15 2 1,580

Pinto Rico, 1 2 2 15

Cresylic Acid—

Ghent, 2 t. 2 c. £22

Disinfectants—

Para, 6 c. 3 q. £7

Guano—

S. Cruz de Tenerife, 10 t. £34

Gypsum—

New York, 31 t. 14 c. £133

Iron Oxide—

Philadelphia, 7 t. 12 c. £130

Lamp Black—

Pernambuco, 2 cks.

Lime—

Lagos, 8 t. 3 c. 1 q. £8

Antigua, 20 pns.

Portland, Me., 15 t.

Litharge—

Operto, 4 cks.

Magnesia—

Albion, 10 cks.

Tarragona, 20

Magnesium Sulphate—

Boston, 30 cks.

Manganese—

Amoy, 25 t.

Manure—

Venice, 354 t. 1 c. 3 q. £1,230

Genoa, 256 1 544

Rochester, 400 4 1,142

Cherbourg, 479 5 1,455

Gehre—

Para, 25 kgs.

Oxalic Acid—

Boston, 10 t. 13 c. 3 q. £600

Paint—

Alexandria, 61 kgs.

Amsterdam, 6 6 dms.

Beyrout, 55

Calcutta, 200 85 3 cks. 5 cs.

Campana, 10 pkgs.

Cartagena, N.G., 10 pkgs.

Cardenas, 4

E. London, 16 dms. 4

Gd. Canary, 14 4 cks.

Havana, 71

Malta, 1

Matanzas, 1 brl. 4

N. Orleans, 1 2

New York, 2 2

Pernambuco, 125 kgs.

St. Thome, 67 4

Sierra Leone, 10

Tripoli, Syria, 1

Halifax, 31

Iquique, 25 31

Lagos, 25 2

Las Palmas, 20 39 57 pkgs.

Lisbon, 4 tins. 32

Para, 3 2

Pt. Natal, 104 54 dms.

St. Thome, 5

Valparaiso, 35

Vera Cruz, 3 cs.

Painters' Colours—

Boston, 1 kg.

Bremen, 100

Cape Town, 99 1 ck. 4 brls.

Cephalonia, 8

Coquimbo, 2 bks. 32

Genoa, 498 1 10 dms

Iquique, 5

Leghorn, 1

Lisbon, 1 1 ck. 1 cs.

New York, 6 tcs. 16 23 32

Para, 10

Pernambuco, 11

Rio de Janeiro, 9

Rotterdam, 30 bgs.

Salonica, 2 tcs. 2

Santiago, 3

Santos, 20 15

Benin, 20

Las Palmas, 290

Manaos, 9

Marseilles, 19 200

N. Orleans, 20 3

Portland, Me., 30

San Sebastian, 75

Santander, 5

Valencia, 100 cs.

Paraffin Wax—

Boston, 100 cs.

Phosphorus—

San Luis Potosi, 3 c. £14

Kingston, Jam., 14 20

Trinidad, 20 cs. 200

Shanghai, 30 300

Pieric Acid—

New York, 2 t. 17 c. 1 q. £260

Plumbago—

Manaos, 3 cs.

N. Orleans, 10 cks.

Potassium Bichromate—

Rotterdam, 6 c. £5

Rio de Janeiro, 10 2 q. 22

Potassium Chlorate—

Christiania, 2 c. £6

Vigo, 6 t. 338

New York, 27 12 1,172

Genoa, 1 55

Puebla, 1 55

Higo, 10 485

Hong Kong, 5 12 285

Shanghai, 5 59

Naples, 1 12

Tampico, 3

San Luis Potosi, 4

Salt—

Algoa Bay, 13 t. 285

Amoy, 285

Baltimore, 499

Benin, 12

Boston, 200

Brisbane, 117

B. Ayres, 6 3 c.

Christiania, 73 13

Faroe Islands, 214 20

Galveston, 1,537

Ghent, 178

Halifax, 112

Iquique, 2

New Orleans, 100

Newport News, 150

New York, 210

Noqui, 23 7

Old Calabar, 40 2

Opobo, 40 1

Punta, 25

Salt Pond, 8 6

Sapelli, 25

Seattle, 921 9

Lagos, 29 10

Rio de Janeiro, 2 2

Trinidad, 17 17

Valparaiso, 290

Salt Cake—

Philadelphia, 169 t. 16 c. £24

Newport News, 123 14

New York, 2 7 3 q. 4

Baltimore, 116 12

Saltpetre—

Para, 8 t. 10 c. £19

Sheep Dip—

M. Video, 1 t. 12 c. 2 q. £4

eniate—	10 cks.	
orate—	30 cks.	
arbonate—	7 kgs.	
	500	
	220	
	100	50 cks.
	1,100	
	20	
	105	
	10	
	200	
	30	
	100	
	100	105
	10	4
	4	
	5	
	30	
	2	
	4	30 bgs.
	110	10 brls.
	4	
	40	
	50	
	125	
	800	
	14	
	1,000	200
	50	27
	25	
	200	
arbonate—	84 brls.	
	50	
lorate—	4 kgs.	
	20	6 cks
	4	
uorate—	34 bgs.	
yposulphite—	27 cks.	
	20 kgs.	
icate—	15 brls.	
annate—	2 cks.	
eiro, 2 cks.		
	7 t.	10 c.
	150	6
Acid—	19 c.	3 q.
	3 t.	5
sphate—	5 t.	
	6	
	27 brls.	
	35	229 hlf.-pns.
	28	
	32	
	5 pns.	10 cks.
te—	3 brls.	
	50 dms.	
	2 cs.	
	40 dms.	
	6	
	1	
	4	
	4	
	1	
Me.,	4 c.	2 q.
ad—	100 kgs.	
itals—	8 c.	2 q.

CHESTER.

ending January 17th.

im Sulphate—	1,345 bgs.
Colours—	2 cks.
il—	6 dms.

Carbolic Acid—	
Hamburg,	40 brls.
Rotterdam,	41 cks.
Copperas—	
Beyrout,	20 brls.
Logwood—	
Alexandria,	67 bgs.
Mirbane Oil—	
Hamburg,	3 brls.
Pitch—	
Antwerp,	90 t.
Alexandria,	100 brls.
Rotterdam,	48 t.
Potassium Bichromate—	
Alexandretta,	8 cks.
Salammoniac—	
Alexandria,	10 brls.
Soda Crystals—	
Jaffa,	8 brls.
Sodium Arseniate—	
Rotterdam,	4 cks.
Sodium Bicarbonate—	
Alexandretta,	10 kgs.
Tallow—	
Rotterdam,	25 cks.

HULL.

Week ending January 12th.

Alkali—	
Rotterdam,	2 cks.
Ammonium Sulphate—	
Hamburg,	500 bgs.
Reval,	92
Rouen,	502
Benzol—	
Rotterdam,	50 cks.
Bleaching Powder—	
Bombay,	20 cks.
Hango,	87
New York,	155
Trieste,	10
Caustic Soda—	
Molfetta,	70 dms.
Trieste,	10
Chemicals (otherwise undescribed)	
Bombay,	864 cks.
Bergen,	10 pkgs.
Christiania,	3 cs.
Gothenburg,	2
Hamburg,	8
Harlingen,	35
Konigsberg,	12
Kurrachee,	699
New York,	25
Rotterdam,	70
Reval,	60
Cottonseed Oil—	
Antwerp,	100 c.
Amsterdam,	41
Bremen,	108
Copenhagen,	67
Christiania,	17
Fiume,	100
Hamburg,	533
Rotterdam,	1,489
Trieste,	700
Dyestuffs (otherwise undescribed)	
Antwerp,	1 kg.
Harlingen,	2 cs.
New York,	5
Rotterdam,	1
Rouen,	8 cks.

Linseed Oil—

Bombay,	279 c.
Bergen,	24
Christiania,	173
Christiansund,	53
Drontheim,	69
Kurrachee,	54
Molfetta,	10
Rotterdam,	205

Mineral White—

Bombay,	200 bgs
Bergen,	50

Paint—

Bombay,	560 cks.
---------	----------

Painters' Colours—

Antwerp,	2 cks.	1 cs.
Bombay,	14	187
Bergen,	1	515 dms.
Drontheim,		6
Ghent,		30
Hamburg,	8	
Kurrachee,	18	
Molfetta,	28	1
New York,	87	5 kgs.
Rotterdam,	9	23 pkgs.

Pitch—	
Antwerp,	480 t.
Rouen,	5
Stavanger,	13 cks.
Soap—	
Stettin,	46 cs.
Soda Ash—	
Harlingen,	15 cks.
Tallow—	
Gothenburg,	20 cks.
Rotterdam,	30 tcs.
Tar—	
Copenhagen,	10 cks.
Tar Oil—	
Antwerp,	30 cks.
Turpentine—	
Bombay,	60 cks.
Varnish—	
Antwerp,	5 cks. 5 cs.
Bombay,	120 3

GLASGOW.

Week ending January 17th.

Albumen—	
U.S.A.,	1 brl. 2 cs.
Ammonium Sulphate—	
Baltimore,	465 bgs.
Philadelphia,	500
Hamburg,	50 t. 16 c.
Bleaching Powder—	
Bombay,	2 t. 19½ c.
Carbolic Acid—	
Rotterdam,	25 cks.
Caustic Soda—	
U.S.A.,	20 t. 1¼ c.
Coal Products—	
Creosote Oil	
Christiania,	£10
Pitch	
Rochefort,	1,100 t.
Hamburg,	34
Bombay,	17 brls.
Tar	
U.S.A.,	200 brls. 122 t. 15 c.
Bombay,	105
Copperas—	
Bombay,	58 t. 16¾ c.
Calcutta,	125 cks.
Dyestuffs—	
Extracts	
Montreal,	5 cks.
Logwood	
Valleyfield,	10 t. 11 c.
Glucose—	
Algoa Bay,	20 brls.
Cape Town,	180 pkgs.
New York,	58 dms.
Linseed Oil—	
Hong Kong,	900 glns.
Litharge—	
Amsterdam,	4 cks.
Manganese Oxide—	
Philadelphia,	11 cks.
Manure—	
Philadelphia,	500 bgs.
Valencia,	500 double bgs.
Paint—	
Havana,	10 cks.
Valparaiso,	78
Shanghai,	8 t. 7¼ c.
Painters' Colours—	
Hong Kong,	£20
Saigon,	100
Paraffin Wax—	
Fiume,	20 cs. 20 bgs.
Trieste,	20 200
Barcelona,	10 92
Valencia,	20
Fremantle,	2 t. 5½ c.
Christiania,	4
Potassium Bichromate—	
Philadelphia,	40 cks.
Salt—	
Valparaiso,	2,054 bgs.
Slag—	
Amsterdam,	201 t.
Rotterdam,	400
Soap—	
Algoa Bay,	60 bxs.
Dry Harbour, Jam.,	50 brls.
Soda Ash—	
Baltimore,	200 bgs.
Soda Crystals—	
Valparaiso,	100 brls.
Sodium Phosphate—	
U.S.A.,	5 t. 7¼ c.

Treacle—	
Algoa Bay,	3 cs.
Bergen,	6 t. 13 c.
Christiania,	8 3
White Lead—	
Algoa Bay,	2 cks.
Natal,	180 dms.
Antwerp,	1 t. 2 c.

TYNE.

Week ending January 12th.

Alkali—	
Christiania,	2 t.
Aarhus,	10 4 c.
Rotterdam,	5 3
Ammonia—	
Aarhus,	2 t. 10 c.
Ammonium Sulphate—	
Valencia,	252 t. 13 c.
Antimony—	
Christiania,	6 c.
Copenhagen,	1 t.
Rotterdam,	12 1
Gothenburg,	10
Arsenic—	
Gothenburg,	1 t. 2 c.
Bleaching Powder—	
Gothenburg,	5 t.
Antwerp,	25 4 c.
Christiania,	11
Aarhus,	9 19
Copenhagen,	15 1
Rotterdam,	17 8
Drontheim,	10 3
Caustic Soda—	
Antwerp,	4 t. 11 c.
Drammen,	1 3
Copenhagen,	2 18
Gothenburg,	50 4
Colours—	
Copenhagen,	5 c
Litharge—	
Hamburg,	1 t. 3 c.
Rotterdam,	11
Magnesia—	
Antwerp,	1 c.
Paint—	
Copenhagen,	10 c.
Rotterdam,	9
Bergen,	4 t. 1
Soda—	
Christiania,	25 t. 12 c.
Drammen,	25
Esbjerg,	50
Rotterdam,	10 4
Soda Ash—	
Gothenburg,	79 t. 17 c
Antwerp,	5 6
Christiania,	20
Copenhagen,	20 3
Sulphur—	
Gothenburg,	80 t.
Drammen,	200
Superphosphate—	
Valencia,	70 t. 1 c.
White Lead—	
Copenhagen,	1 t. 14 c.

GOOLE.

Week ending January 9th.

Coal Products (otherwise undes.)—	
Boulogne,	2 cs. 75 cks.
Ghent,	2
Manure—	
Boulogne,	134 bgs.
Rotterdam,	173
Pitch—	
Dunkirk,	125 t.
Antwerp,	332

GRIMSBY.

Week ending January 12th.

Chemicals (otherwise undescribed)	
Hamburg,	16 cs. 10 cks. 17 pkgs
Coal Products (otherwise undes.)—	
Dieppe,	57 cks.
Dyestuffs (otherwise undescribed)	
Dieppe,	1 cs.
Painters' Colours—	
Rotterdam,	3 cks.
Hamburg,	1
Antwerp,	3 cs.

PRICES CURRENT.

WEDNESDAY, JAN. 23

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.B. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

Acids:—

	£	s.	d.
Acetic, 25 % and 40 %	per cwt.	7/-	& 10/6
Glacial	"	50/-	
Arsenic S.G., 2000°	"	0	15 0
Fluoric	per lb.	0	0 3½
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0 10
(Cylinder), 30° Tw.	"	0	3 0
Nitric 80° Tw.	per lb.	0	0 1½
Nitrous	"	0	0 1½
Oxalic	nett	0	0 3½
Phosphoric, 1750°	"	0	0 11
Picric	"	0	0 10
Sulphuric (fuming 50 %	per ton	15	10 0
(monohydrate)	"	5	10 0
(Pyrites, 168°)	"	3	0 0
(free from arsenic, 145°)	"	1	5 0
Sulphurous (solution) S.G. 1025	"	1	6 0
Tannic (pure)	per lb.	0	1 0
Tartaric	"	0	0 11
Arsenic, white powdered	nett	per ton	14 10 0
Alum (loose lump)	"	4	17 6
Alumina Sulphate (pure)	"	4	17 6
Aluminoferrous	"	2	7 6
Aluminium	per lb.	0	3 0
Ammonia, Anhydrous	"	0	1 4
" 880=28° B.	per lb.	0	0 3
" =24° B.	"	0	0 2½
Carbonate	nett	"	0 0 3½
Muriate	per ton	23	10 0
(sal-ammoniac) 1st & 2nd	per cwt.	39/-	& 37/-
Nitrate	per ton	41	0 0
Phosphate	per lb.	0	0 10½
Sulphate (grey) London	per ton	11	10 0
(grey) Hull	"	11	8 9
Aniline Oil (pure)	per lb.	0	0 5½
Aniline Salt	"	0	0 4½
Antimony	per ton	32	10 0
(tartar emetic)	per lb.	0	0 9½
(golden sulphide)	"	0	0 10
Barium Chloride	per ton	6	10 0
Carbonate (native)	"	3	5 0
Sulphate (native levigated)	"	45/-	to 75/-
Bleaching Powder, 35 %	nett	"	7 5 0
Liquor, 7 %	"	3	10 0
Bisulphide of Carbon	"	11	5 0
Chromium Acetate (crystal)	per lb.	0	0 6
Calcium Chloride	per ton	2	2 6
China Clay (at Runcorn) in bulk	"	17/6	to 30/-

Coal Tar Products and Dyes:—

Coal Tar Products and Dyes :—				
Alizarine (artificial) 20 %	.. .. .	net per lb.	0 0 8	
Magenta	.. .. .	"	0 3 9	
Anthracene, 30 % A, f.o.b. London	.. .. .	per unit per cwt.	0 1 1	
Benzol, 90 % nominal	.. .. .	per gallon	0 1 0	
" 50/90	.. .. .	"	0 1 0½	
Carbolic Acid (crystallised 40°)	.. .. .	per lb.	0 0 5¾	
" (crude 60°)	.. .. .	per gallon	0 1 9	
Creosote (ordinary)	.. .. .	"	0 0 2	
" (filtered for Lucigen light)	.. .. .	"	0 0 2	
Crude Naphtha 30 % @ 120° C.	.. .. .	"	0 0 5	
Grease Oils, 22° Tw.	.. .. .	per ton	2 10 0	
Pitch, f.o.b. Liverpool or Garston	.. .. .	"	1 13 0	
Solvent Naphtha, 90 % at 160°	.. .. .	per gallon	0 1 2½	
Lucigen " and " Wells Oils	.. .. .	"	0 0 2½	
Copper	.. .. .	per ton	40 11 3	
" Sulphate	.. .. .	"	15 10 0	
" Oxide (copper scales)	.. .. .	"	39 0 0	
Glycerine (crude)	.. .. .	"	15 0 0	
" (distilled S.G. 1250°)	.. .. .	"	40 0 0	
Iodine	.. .. .	nett, per oz.	0 0 9	
Iron Sulphate (copperas)	.. .. .	per ton	1 5 0	
" Sulphide (antimony slag)	.. .. .	"	2 0 0	
Lead (sheet) for cash	.. .. .	"	10 17 6	
" Litharge Flake (ex ship)	.. .. .	"	13 10 0	
" Acetate (white )	.. .. .	"	24 15 0	
" brown "	.. .. .	"	15 10 0	
" Carbonate (white lead) pure	.. .. .	"	16 0 0	
" Nitrate	.. .. .	"	19 10 0	

Lime, Acetate (brown)	..	..	..	..	per ton	5
" " (grey)	..	..	..	..	"	9
Magnesium (ribbon and wire)	..	..	..	..	per oz.	0
" Chloride (ex ship)	..	..	..	..	per ton	2
" Carbonate	..	..	..	..	per cwt.	1
" Hydrate	..	..	..	..	per ton.	17
" Sulphate (Epsom Salts)	..	..	..	..	per ton	3
Manganese, Sulphate	..	..	..	..	"	17
" Borate	..	..	..	..	per cwt.	2
" Ore, 70 %	..	..	..	..	per ton	4
Methylated Spirit, 61° O.P.	..	..	..	..	per gallon	0
Naphtha (Wood), Solvent	..	..	..	..	"	0
" " Miscible, 60° O.P	..	..	..	..	"	0
Oils:—						
Cotton-seed	..	..	..	..	per on	18
Linseed	..	..	..	..	"	22
Petroleum, American	..	..	..	..	per gallon	0
Stearine	..	..	..	..	per ton	26
Phosphorus (yellow)	..	..	..	..	per lb.	0
" (red)	..	..	..	..	"	0
Potassium (metal)	..	..	..	..	per oz.	0
" Bichromate	..	..	..	..	nett per lb.	0
" Carbonate, 90% (ex ship)	..	..	..	..	per ton	16
" Chlorate	..	..	..	..	per lb.	0
" Cyanide, 98%	..	..	..	..	"	0
" Hydrate (Caustic Potash) 80/85 %	..	..	..	..	per ton	21
" " (Caustic Potash) 75/80 %	..	..	..	..	"	20
" " (Caustic Potash) 70/75 %	..	..	..	..	"	19
" Nitrate (refined)	..	..	..	..	per cwt.	1
" Permanganate	..	..	..	..	per cwt.	3
" Prussiate Yellow	..	..	..	..	per lb.	0
" Sulphate, 90 % (ex ship)	..	..	..	..	per ton	9
" Muriate, 80 % (do.)	..	..	..	..	"	8
Silver (metal)	..	..	..	..	per oz.	0
" Nitrate	..	..	..	..	"	0
Sodium (metal)	..	..	..	..	per lb.	0
" Carb. (refined Soda-ash) 48 %	..	..	..	..	nett per ton	4
" " (Caustic Soda-ash) 48 %	..	..	..	..	" " O.B.	4
" " (Carb. Soda-ash) 48%	..	..	..	..	" " O.B.	4
" " (Alkali) 58 %	..	..	..	..	" " O.B.	4
" " (Soda Crystals)	..	..	..	..	"	2
" Acetate (ex-ship)	..	..	..	..	"	14
" Arseniate, 45 %	..	..	..	..	"	11
" Chlorate	..	..	..	..	per lb.	0
" Borate (Borax)	..	..	..	..	net, per ton	20
" Bichromate	..	..	..	..	per lb.	0
" Hydrate (77 % Caustic Soda) (f.o.b.)	..	..	..	..	net pr. ton	10
" " (74 % Caustic Soda)	..	..	..	..	"	8
" " (70 % Caustic Soda)	..	..	..	..	"	7
" " (60 % Caustic Soda)	..	..	..	..	"	6
" " (60 % Caustic Soda, cream) (f.o.b.)	..	..	..	..	"	6
" Bicarbonate	..	..	..	..	"	5
" Hyposulphite	..	..	..	..	"	5
" Manganate, 30%	..	..	..	..	"	10
" Nitrate (95 %) ex-ship Liverpool	..	..	..	..	per cwt.	0
" Nitrite, 98 %	..	..	..	..	per ton	29
" Phosphate	..	..	..	..	"	15
" Silicate (glass)	..	..	..	..	per ton	5
" " (liquid, 100° Tw.)	..	..	..	..	"	4
" Stannate, 40 %	..	..	..	..	per cwt.	3
" Sulphate (Salt-cake)	..	..	..	..	per ton.	0
" " (Glauber's Salts)	..	..	..	..	"	1
" Sulphide	..	..	..	..	"	8
" Sulphite	..	..	..	..	"	5
Strontium Hydrate, 100%	..	..	..	..	"	8
Sulphocyanide Ammonium, 95 %	..	..	..	..	per lb.	0
" Barium, 95 %	..	..	..	..	"	0
" Potassium	..	..	..	..	"	0
Sulphur (Flowers)	..	..	..	..	per ton.	7
" (Roll Brimstone)	..	..	..	..	"	5
" Brimstone: Best Quality	..	..	..	..	"	2
Superphosphate of Lime (26%	..	..	..	..	"	2
Tallow	..	..	..	..	"	24
Tin Crystals	..	..	..	..	per lb.	0
" English Ingots	..	..	..	..	per ton	64
Zinc (Spelter)	..	..	..	..	"	14
" Chloride (solution, 100° Tw.)	..	..	..	..	"	5

THE CHEMICAL TRADE JOURNAL

AND
OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

102.

SATURDAY, FEBRUARY 2, 1895.

Vol. XVI.

Contents.

PAGE	PAGE
Report on Manure Material..... 81	Miscellaneous Chemical Market .. 88
the Manure Trade in .. 82	Liverpool Mineral Market .. 89
Sets of Press Roll .. 82	Liverpool Oil and Colour Market.. 89
..... 83	The Metal Market .. 89
..... 83	Tyne Chemical Report..... 89
Pressure Gauge .. 83	West of Scotland Chemicals .. 89
ds of London Institute .. 84	Hull Paint, Oil, and Colour Report 90
of Bone Black .. 85	New Companies..... 90
Manchester Soap Co. .. 86	The Patent List..... 90
of Manchester Water. 86	Gazette Notices... 90
ply of London .. 86	Imports .. 91
..... 87	Exports .. 93
onia Products .. 88	Prices Current .. 96

ADVERTISEMENTS.

WED, Quotations for Acetate of Soda, Brown White Sugar of Lead, Red and Yellow Prussiate of Potash Zinc Oxide, Dextrine, Farina, Chlorates of Potash and Soda, in large quantities.—“Prussiate,” *Chemical Trade Journal* Office, Manchester.

Managers and Chemical Manufacturers, &c.—Two good Second-hand Solid Plate LEAD SATURATORS; also MILL and HEATER, &c.—For particulars and to treat, apply to WILSON AND CO., Central Plumbing Works, Bolton.

Notices.

Communications for the *Chemical Trade Journal* should be sent by Post Office Orders made payable to—

B BROS., 32, Blackfriars Street, MANCHESTER.

Our Registered Telegraphic Address is—

“**Expert, Manchester.**”

Terms of Subscription, commencing at any date, to the *Trade Journal*,—payable in advance,—including postage of the world, are as follows:—

Half-yearly (52 numbers) 12s. 6d.
Yearly (26 numbers) 8s. 6d.
Quarterly (13 numbers) 3s. 6d.

Communications for the Editor, if intended for insertion in the next issue, should reach the office not later than **Tuesday** evening.

Reports, and correspondence on all matters of interest to the chemical and allied industries, home and foreign, are solicited. Contributors should condense their matter as much as possible, and send only the paper, and in all cases give their names and addresses, not necessarily for publication. Sketches should be sent on separate sheets.

Advertisements.

Advertisements of Situations Vacant, Premises on Sale or To be Let, and Wants, and Specific Articles for Sale by Private Contract are accepted in the *Chemical Trade Journal* at the following rates:—

10 Words and under..... 2s. 6d. per insertion
Each additional 10 words 6d.

Advertisements, Announcements in the Directory Columns, and all Advertisements, are charged at the Tariff rates, which will be forwarded on request.

Advertisements intended for insertion in the current week's issue should reach the office by **Wednesday morning** at the latest.

CURRENT TOPICS.

THE WISDOM OF THE UNWISE.

THOUGH the Metropolis is the accepted centre of the world, it is remarkable what a mass of faulty information those gentlemen who act as London correspondents can be guilty of at times. Though purporting to represent the doings of London, they often convey about as correct an idea of what is doing in certain matters as a Fiji Islander could.

The correspondent of a by no means insignificant provincial paper has been enlightening his readers on the flash-point of mineral oils.

It is a matter of common knowledge that a Parliamentary Select Committee sat last year, and that it will sit again after Parliament meets, and the questions the Select Committee were considering have been fully dealt with in these columns. The learned correspondent in question, however, presumably has only a partial acquaintance with what the Committee sat to consider, and, moreover, cannot have given much attention to the preliminary report which was issued last summer.

After learning what the Select Committee have done, and are going to do, it is somewhat of a surprise to find that these said valuable items about the doings of the Select Committee, which were common property some six months ago, have been prefaced by some wholly unqualified assertions, which, if correct, render any further deliberations of a Select Committee nothing but a wanton waste of time, and which, if incorrect, are worse than unwarrantable. This worthy correspondent, after admitting that the number of fatal accidents in London is not only serious, but steadily increasing, has the assurance to pronounce, without any hesitation, that “this is not due to the character of the oil.” He further states that whenever an accident takes place, the source of the oil is traced and tests made, and “it is practically never found to fall short of the legal standard of safety.” It would be hard to say why the word “practically” is used, but it is a matter of passing importance compared with what it is the oil never falls short of. How long have we had a “legal standard of safety?” The Government adroitly avoid all responsibility by denying the existence of any such standard. The present minimum flash point of 73° F. Abel is no more a standard of safety than the Government stamp on a patent medicine is a guarantee of its virtues. That, as far as the safety of the public is concerned, the present flash point is made to act as a guarantee of safety, there is no doubt, but it is not a legal standard. It is merely the point which, under the Petroleum Act, has been fixed to distinguish between petroleum-spirit, the sale of which the London County Council controls, and ordinary burning oil, over which the Council has absolutely no control whatever.

After all, however, what is the good of the Select Committee sitting again to consider the petroleum laws? There is nothing

for the Committee to discuss. Our learned correspondent has disposed of the whole matter. He states that accidents are "not due to the character of the oil. . . . It is always the fault of the lamp." What is the good of bothering, therefore, about laws for the oil? It is clearly stated that the fault does not lie with the oil, and the lamp is solely to blame. The Committee have the matter in a nutshell. All that remains to be done is to consult the great authority who has made such unhesitating pronouncements, and study the unimpeachable evidence which he presumably must have procured before committing himself to such sweeping statements. The only unfortunate thing about it all is, that we fear the Committee will not even ask the said authority to come and express his views, to say nothing of establishing them. The puzzle is to know how these correspondents get primed with such remarkable facts (?).

THE LAUTARO NITRATE COMPANY.

During the week this company has offered £80,000. first mortgage five per cent. debentures of £20. and £100. each at 98 per cent. These debentures are to be redeemable on the 1st of January, 1910, at par, or previously. In the latter case, a sinking fund will be employed, which will be applied either by annual drawings or purchase in the open market. These debentures have been issued for the purpose of redeeming certain six per cent. debentures to the value of £79,100., which constitute the sole outstanding indebtedness of the company.

The past history of the company is interesting. It has now been formed five years. The works are in the Taltal district in Chili, and three years after formation, an amalgamation with the Santa Luisa Nitrate Company was effected. Since then things have gone satisfactorily, and, according to the returns for 1894, the joint production of the amalgamated companies places the present company at the head of the list of producers as regards the amount of nitrate turned out.

REVIEW OF THE MANURE TRADE IN 1894.

FROM a seller's point of view the year 1894 can only be regarded as disappointing, for although prices over the spring months made a substantial advance, values at the close indicate a decline all round from those recorded at the opening of the year. Crops on the whole have been abundant, but that advantage has been largely neutralised by the exceptionally low prices to which all cereals have fallen, so that at the opening of 1895 the farmer is scarcely heavier in pocket than he was twelve months ago. Then the serious drop in the value of sugar has materially lessened the purchasing power of the beetroot growers on the Continent, and this has no doubt had something to do with the depreciation in the value of sulphate of ammonia. The situation has, however, been fairly well grasped by buyers, and duly discounted.

Mineral Phosphates.—Since the inflation in prices caused by the temporary cessation of raising South Carolina River Rock in the autumn of 1893, the course of the market has been downward, and at the close of 1894 the lowest record all round has been reached. This result has been brought about by the large shipments of high grade rock from Florida, but more especially by the development of the mines in Algeria of the middle and lower grades of rock. It is not at all certain that the lowest point has yet been touched for 55/60% and 60/65%, but unremunerative prices have led to the closing of many mines in Florida, and there seems to be more hope for rock testing 75/80%. Present value of 75/80% Florida is 7½d. per unit; of Peace River rock, 60/65%, about 6½d.; of South Carolina, 55/60%, 6¼d.; and of 60/65% Algerian, 6¼d. per unit. Bones and bone meal: The high prices current 12 months ago and over the spring season led to much larger shipments both from River Plate and India, and this fact, coupled with the fall in the price of sulphate of ammonia, has brought about a serious depreciation in values during the later months of the year. At the beginning of 1894, the value of afloat cargoes of River Plate bones was £4. 15s. per ton; at the close of the year it was not over £4. 8s. 9d. to £4. 10s., according to size and

position. Crushed Kurrachee bones offered at £4. 17s. rose to £5. 2s. 6d. in spring, and closed nominally at £4. 12s. though £4. 10s. was probably the nearest value. Bombay bone opened at £5 per ton, rose to £5. 7s. 6d. in April, and closed £4. 10s. per ton. Nitrate of soda: Owing to the early spring the price advanced from 9s. 3d. per cwt. in January to 10s. 6 10s. 9d. in April, but under pressure of heavier arrivals, 9s. 4½d. again reached at the end of May. Since then the price fluctuated between 8s. 9d. and 9s., and closed rather quietly at 8s. 9d. per cwt. for ordinary quality, and 8s. 10½d. per cwt. for fine. The termination of the combination of producers has led to larger production so far the scarcity of labour on the West Coast has prevented any excessive output. Supplies for the coming season would seem ample in any case, but it is yet too early to form an opinion whether the consumption is likely to be much, if at all, in excess of 1894. For the most part of the year miscellaneous material was in supply, and until towards the close prices ruled high. At the close, however, the supplies are larger, and there is very little disposition to purchase further ahead, unless at something like the basis per unit of ammonia at which sulphate of ammonia has arrived. With opening of the manure season again, some further movement may be expected, but it is not apparent as yet.

BRICK DUST MORTAR.

THE use of brick dust mortar as a substitute for hydraulic cement where the latter cannot be obtained, is now recommended by *Southern Architect* says, on the best engineering authority, as a substitute made with mixtures of brick dust and quicklime showing blocks of one-half inch in thickness, after immersion in water for months, bore without crushing, crumbling, or splitting, a pressure of 1,500 pounds per square inch. It is considered, too, that the addition of even as small a proportion as one-tenth as much brick dust as to ordinary mortars is preventive of the disintegration so often characterising mortars used in the masonry of public works. The use of brick dust mixed with lime and sand is said to be generally and successfully practised in the Spanish dominions, and is stated to be in all respects superior to the best Rosendale hydraulic cement in the construction of culverts, drains, tanks, or cisterns, and even roofs, whether for flat tiles or for making the usual tropical flat roof. The proportions used there in the manufacture are, approximately, one of brick, one of lime, and two of sand, mixed together dry and tempered with water in the usual way.

THE THREE SETS OF PRESS ROLL SYSTEM.

By CLAYTON BEADLE.

THE above system of manufacturing paper has been strongly advocated by Mr. James Dunbar, in his treatise on "Wood Pulpers." The "three sets of press roll" system was originally introduced with the view of economising fuel, as more water was removed by compression of the rolls, and less left to artificial heat. German papermaker effected economy by reducing the number of drying cylinders as he increased the number of press rolls. Paper, passing the second press, contains, on an average, about 75% of water and 25% of dry material. A large proportion of this water may be removed by introducing more press rolls. Dunbar tells us that the Englishman instead of reducing the number of his drying cylinders, works them at a lower heat, and so makes the drying more gradual. The English method of steady drying results in the production of much better paper than the German method, which consists in roasting the paper as before the introduction of more press rolls. The question has received very little attention, and its importance can only be over-estimated. I have shown (*Chemical News*, vol. 71, 139) the direction of the fibres in a paper is the result of the forces exerted upon the paper during its manufacture. The only evil effect of additional press rolls appears to me to be the production of a tendency to splitting with thickish papers, but with most papers I do not believe this is noticeable. Apart from this single objection, I believe the every reason why as much water as possible should be removed by pressure, and as little as possible by heat. We always find it to be the case that all cellulose, whether of a fibrous nature or amorphous, dried by the application of heat, is under tension and becomes brittle, but if dried by the application of pressure, whereby the fibres are forced into closer contact, and the water expressed, increased strength, and generally, we believe, increased toughness and pliability.

THE PATENT VICTORIA STONE COMPANY.—The directors recommend the payment of a dividend at the rate of 10 per cent. per annum for the half-year ended December 31, 1894, leaving a balance of £5,995. to be carried forward.

JAYA INDIGO.

ESSRS. BUNGE AND COMPANY, of Rotterdam, state in their report for January that during the second semester of the year the prevailing tendency for indigo was weak, and that of Java indigo were made at gradually declining rates.

The small stocks, in consequence of the bad out-turn of the crop, the prices up a little, but in the last months owners, in order to somewhat more freely, were obliged to submit to 6d. under the quotations, or 9d. under the prices ruling in the first quarter of the year, even at these lower figures trade remained far from brisk.

is only during the past few weeks that business and feeling have improved, so that many important lots changed hands at somewhat higher rates. Reports about the new crop are contradictory, as it is many plantations which promised a fair yielding will not meet the expectations.

The firstlings of the new crop may be expected to arrive at Rotterdam towards the end of February.

The production of the last crop has been

about 485 Tons,	
against 632 "	in 1893.
" 638 "	" 1892.
" 711 "	" 1891.
" 503 "	" 1890.
" 722 "	" 1889.
" 662 "	" 1888.
" 589 "	" 1887.

below we give statistics for the past eight years:—

	1894.	1893.	1892.	1891.	1890.	1889.	1888.	1887.
Exports	4,939	6,700	6,717	8,532	7,363	9,231	9,379	9,586
Imports	4,631	6,537	11,033	5,528	8,518	7,265	9,737	11,352
Stock 31st Dec.	1,036	728	565	3,981	977	2,132	166	524

A RECORDING PRESSURE GAUGE.

ESSRS. of steam in chemical works, mills, and manufactories will find this gauge of great convenience and utility.

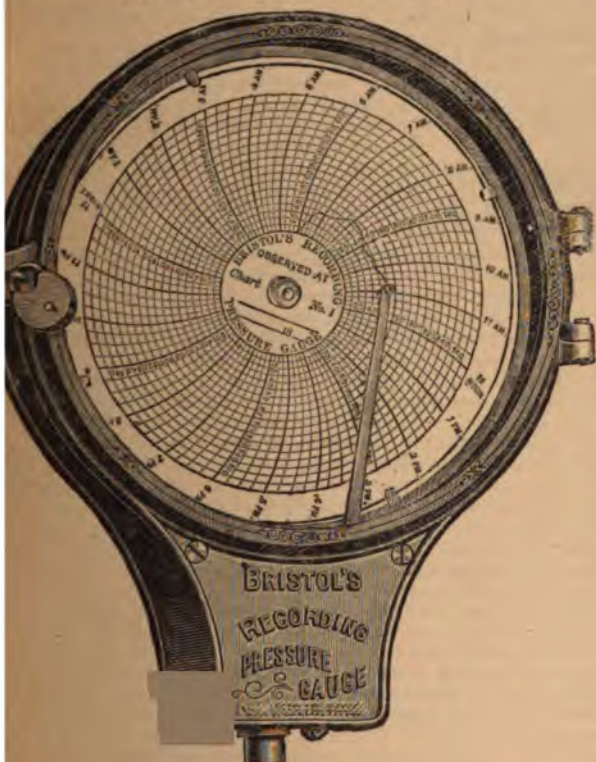


Fig. 1.

Fig. 2 shows the interior of the gauge with the recording mechanism. The method on which the gauge works is as follows:—Pressure enters the sinuous tube A (diaphragm tube for low ranges of pressure) is to straighten and elongate it. This tendency is resisted by the

flexible strip B, thereby converting the tendency to elongate into a multiplied lateral motion. The inking pointer is attached to the end of the pressure tube, and records the fluctuations of pressure upon a uniformly revolving chart. The chart, which is eight inches in diameter, makes one revolution every twenty-four hours, and is marked off with radial arcs and concentric circles. The divisions on the radial arcs correspond to differences in pressure, while those on the concentric circles correspond to the hours of the day. The gauges are made to record up to the pressures indicated in the table which follows.

lbs.	Fee	Inches.	Ounces.	Atmospheres.	Vacuum and Pressure.
1,500	..	..	..	..	..
800	..	..	..	..	..
350	..	100	..	..	..
180	..	..	0 to 4	..	12 .. 2" Vacuum to
90	..	200	..	0 to 20	..
45	..	..	0 to 12	..	6 .. 4" Pressure.
25	..	400	..	..	..
12	..	..	..	..	..
6	..	..	..	..	..

In Fig. 1 the chart and inking pointer are shown. A chart obtained in actual work can be seen by those interested at the office of the *Journal*. The gauge for low ranges of pressure can be used for making continuous records of Gas pressure in street mains, and either pressure or vacuum in connection with draft blast or ventilating apparatus.



Fig. 2.

These gauges are being introduced into this country by Messrs. J. W. and C. J. Phillips, of 23, College Hill, London, E.C.

PURCHASE OF CHEMICAL WORKS IN IRELAND.—Messrs. Kynock and Co., of Birmingham, who recently purchased a considerable amount of property on the Wicklow estate at Arklow, and have already commenced the erection of their extensive Cordite works, have now bought, in addition, the large chemical works formerly owned and worked by the Wicklow Copper Mining Company, and latterly the property of Mr. Breslin, of Bray. The Kynock Company propose going in for the manufacture of chemicals of every description on the same extensive scale in which they carry on their business in Birmingham. Machinery of a new type (not yet in use anywhere), their own invention, will be erected and used all through the works, which will be lighted throughout by the newest type of incandescent lamps and electric arc lights, so that Arklow in a short time will be able to boast of having an industry which, in its way, will be to the front in the world's competition.

CITY AND GUILDS OF LONDON INSTITUTE.

ANNUAL REPORT.

THE City and Guilds of London Institute for the advancement of Technical Education was incorporated in 1879 for promoting the application of science and art to productive industry. The scheme by which this object was to be attained, provided amongst other things for the establishment and maintenance of one or more colleges and schools in the Metropolis, in which systematic and higher technical instruction might be given. The colleges and schools founded and maintained by the Institute are the Central Technical College, at Kensington; the Technical College, Finsbury; and the Technical Art School at Kennington. The Leather Trades School, in Bethnal Green-road, may also be included, for, although it is not directly under the management of the Executive Committee of the Institute, practically the whole of the funds are contributed by some of the Livery Companies through the medium of the Institute.

The diplomas, certificates, and prizes to be presented are, with one or two exceptions, those gained by students at these colleges during the past year.

The exceptions consist of a few certificates awarded by the Technological Examinations Department of the Institute, which conducts in the month of May every year examinations in technological subjects, with the object of encouraging the formation of technical classes outside the Institute's colleges. Almost all the certificates awarded on the results of these examinations have already been distributed from the several centres of examination, and those to be given to-night were awarded to candidates not connected with any registered centre.

Returning to the colleges and schools directly under the management of the Institute, two-thirds, in round figures, of the cost are defrayed by funds contributed to the Institute by the Corporation and the Livery Companies of London. It is therefore appropriate that the annual prize distribution should take place in one of the Companies' halls, and this is the third occasion on which the Fishmongers' Company have kindly placed theirs at the disposal of the Institute for that purpose.

The remaining third of the cost of these colleges and schools is derived from the fees of the students, and as there are many students perhaps I may be permitted to lay stress upon this point. The fees which they are called upon to pay for their education at the Institute's colleges bear a very small proportion to the actual cost of such education. At the Central Technical College the fees cover rather more than one-third of the actual cost, at Finsbury they cover about one-third, and at Kennington and the Leather Trades School about one-tenth.

It must not be assumed from this, however, that the Institute was established with an eleemosynary or charitable object. Its one main object is the advancement of the productive industries of the country, by promoting the study of the application of Science and Art to the several processes carried out in these industries; and although it is a matter of satisfaction to the Executive Committee that its Colleges should be filled, and that the students as a body should be diligent and successful in their studies, the measure of their success is, and always will be, the influence which will be exercised by students after they have left the Institute's College, on the several industries in which they may be engaged. Already we can point to many students who have gained high places in their respective industries, and have contributed to the advancement of those industries by original work and invention; the careers of the students who are coming up to receive their awards will be watched with interest by all connected with the Institute.

The first awards to be given away are those gained by students of the Institute's Central Technical College, Kensington. The training provided at this College is of an advanced character, and the Diploma of Associate of the City and Guilds of London Institute is awarded to students who have entered the College as matriculated students, and have followed one of the three prescribed courses of instruction in Mathematics, Engineering, Physics and Chemistry, intended to fit them to become Civil and Mechanical and Electrical Engineers or Technical Chemists. At the close of last session, out of 46 matriculated third year students, 30 have been awarded the Diploma of Associate, the highest place in the class list being taken by Frank Maers, a student of the Department of Civil and Mechanical Engineering, to whom is awarded the Siemens Memorial Medal in that department.

The highest place in the Department of Electrical Engineering was taken by H. C. Leake, who also receives a Siemens Memorial Medal as the first student in that department.

18 students of the College who have done creditably, but failed to reach the standard of associateship, have been awarded certificates, and 17 others who took special courses, have been awarded certificates in the subjects in which they studied.

The Diploma of Associate is the highest distinction awarded to students at the close of their college career; but a still higher dis-

inction is conferred upon those Associates who have spent not than five years in actual practice of their profession, and proof of having done some original and valuable research work of having otherwise contributed to the advancement of the industry in which they are engaged. This distinction, the fellowship of the Institute, was conferred last year upon Dr. W. E. Sumpner, who won the Clothworkers' Scholarship in 1884, the year in which the college was opened, and was amongst the first list of students to be elected associates in 1887. Dr. Sumpner subsequently held the post of demonstrator in the Physics Department of the college, and is known in the electrical world by his valuable and original research for one of which the University of London conferred upon him the degree of D.Sc. A little more than a year ago he was appointed of the Electrical Department of the Battersea Polytechnic, and he has been recently appointed principal of the Birmingham Municipal Technical School.

After the awards of the Central Technical College come those of the Technical College, Finsbury. The instruction provided at this college is not of such a high grade as that at the Central Technical College, Kensington. Students are admitted at an earlier age, and the instruction given is intended to fit them for intermediate posts in mechanical or chemical industries, or to prepare them for more advanced studies at the Central Technical College.

At the close of last session 38 students successfully completed courses of instruction, and have been awarded the certificate of the college. In the Department of Mechanical Engineering C. T. Beckett, S. R. Fletcher, J. P. Fox, and H. A. Stones have also been awarded prizes for excellence of work. In the Department of Electrical Engineering, E. E. Hoadley, P. S. Sheardown, and F. S. Spiers, similarly been awarded prizes, while other prizes have been awarded to students at the close of their first year's course.

At the Technical College, Finsbury, there is also an evening department for apprentices and others who are engaged in works during day-time, and desire to obtain a more systematic knowledge of the application of science and art to their industries than is obtainable in the workshop. The evening classes of the College include, in addition to subjects relating to mechanical and electrical engineering, chemistry, classes in modelling, technical painting, cabinet work, enamelling, carpentry and joinery, plumbing, metal plate work, and others, and some 60 prizes to students of these classes have been awarded, including the Baroness Rothschild's prize of £5 awarded to E. O. Clark for a cabinet, designed and executed in stained wood decorated with enamels.

Before passing on to the next College it may be mentioned that Dr. Sumpner, who has recently been elected to the Fellowship of the Institute, and Mr. H. A. Humphrey, who was elected to the Fellowship in 1893, and who is now engineering manager in the firm of Brunner, Mond, and Co., were both students at the Technical College, Finsbury, before entering the Central Technical College; and it is to be hoped that those students who have recently passed on from Finsbury to the Central, may in future years make as good use of their opportunities as these two old students have done.

The next awards on the list are those of the Technical Art School at Kennington Park Road. This school is confined entirely to applied art, and includes departments in modelling, design, drawing, and decoration. In the early part of last year an exhibition of works past and present students of this school was held at Skinner's Hall, and gave evidence of the very useful work which it had performed in the past and promised to perform in the future. Among other students in the modelling class who exhibited, may be mentioned George Frampton, A.R.A., who has recently been appointed inspector of art schools, under the Technical Education Board of the London County Council; Mr. Harry Bates, A.R.A.; and Mr. Charles Atterton, who has recently been appointed instructor of sculpture in the school of architecture and applied arts in the Liverpool College of the Victoria University.

The City and Guilds' Sculpture Studentship, of the value of £50 a year for two years, open for competition to students who have attended the modelling classes of the school for at least three years, has been awarded to E. G. Bramwell. In the previous year's competition Bramwell obtained honourable mention, and it is to be hoped that this studentship which he has now carried off may enable him by his study to take a high place in his art. The judges remarked upon the excellence and originality of the designs submitted by students in competition for the Sculpture Studentship, and honourable mention has been awarded to R. G. Wheaton. In the early part of last year the Executive Committee of the Institute offered for competition a medal for the best modelling studies from the life, and the medal was won by Frank L. Jenkins, who subsequently competed for, and was successful in winning, the British Institution Scholarship, of the value of £75 a year, tenable for two years, and open for competition to all students who have obtained a gold or silver medal for work done in the life in any art school in the United Kingdom and Ireland.

Leather Trades School, in Bethnal Green-road, is an evening school for apprentices and others engaged in boot and shoe manufacture. During the past year several important changes have been made in the staff and the organisation of the school. Mr. F. Y. G has been appointed head master, and he has been so far successful in improving the organisation of the school, and increasing considerably the number of students attending. On the results of the examinations held at the close of last session, the first place was taken by Miller, who receives the full certificate of the school, and the prize in the advanced stage. The sewing machine, presented by Messrs. Jones and Co and the school, for practical work in sewing and machining, has been gained by Miss K. Sellon. The institute has continued to co-operate with the London School of Design and the Drapers' Company in continuing the manual training for boys and girls attending elementary schools. The prizes for the year were distributed by the joint Committee appointed by these three bodies will be distributed very shortly at Drapers' Hall.

THE ANALYSIS OF BONE BLACK.

A paper on this subject read before the American Chemical Society, Dr. W. D. Horne says:—
 Several years' experience in the analysis of bone-black have led me to the adoption of the following method for attaining accurate results with comparative rapidity:—

A few char bought from the dealer, the determination of moisture content, being frequently limited by contract to 3 per cent. Char in constant use in sugar refineries, the moisture in the dried sample is of no importance under usual conditions. Moisture is determined by heating 2 grms. of the unground char in a hot air bath at 140° C. It can be weighed between two glass plates held by a clip to prevent absorption of moisture. A convenient way of estimating calcium carbonate is with Lunge's ester, using mercury. Two grms. of the finely pulverised sample reduced into a two ounce Erlenmeyer flask, and moistened with a saturated solution of mercuric chloride, the tube of 10 c.c. of hydrochloric acid (sp. gr. = 1.12) introduced, and the flask closed with a stopper, which, with a short glass tube and a rubber tube, is hung upon the three-way cock. By tipping the acid out upon the char properly manipulating the stop-cock, the carbon dioxide is evolved, collected, and measured. Any hydrogen sulphide given off is absorbed by the mercuric chloride. Corrections are made for temperature and atmospheric pressure.

In the determination of carbon, iron, calcium sulphate, and in ash, one portion is used. In preparing the sample for analysis, particles must first be removed by a magnet, and the char then reduced to an almost impalpable powder.

Two grms. of this are moistened with water and treated in a four-ounce covered beaker, with 20 c.c. hydrochloric acid, and boiled until solution is complete, which is within thirty minutes. The beaker is filled up with boiling water, and after settling, which takes place almost immediately, decanted upon a weighed platinum Gooch filter with asbestos plug. The carbon is washed by decantation in five or six times until the filtrate is free from chlorine. The filtrate and first decanted washing contain practically all of the iron and calcium sulphate. The following wash-waters can usually be used. The carbon is washed out of the beaker into the Gooch filter, then washed with 80 per cent. alcohol, 95 per cent. alcohol and each two or three times, set in a water-jacketed air-bath, and at 100° C to a constant weight, which will take about three hours.

The increased weight is due to carbon and ash. The carbon is removed off over the blast. The loss of weight is then carbon, and the residue is ash.

The acid solution containing iron and calcium sulphate a drop of orange solution is added and ammonia to nearly neutral reaction. Sodium acetate is added until the solution turns yellow, and then drops in excess. The solution is now heated below 70° C. until the precipitation of iron and aluminium phosphate takes place, which is usually in about twenty minutes. The precipitate, after being freed from chlorides, is dissolved by dilute sulphuric acid into a clean Erlenmeyer flask, 10 c.c. of a 10 per cent. solution of sodium acetate added, and boiled to reduce the iron and to expel the sulphur. To ascertain when this gas ceases to come over, the vapour from the flask through a glass tube fitting through the rubber stopper and inclining vertically downward at its outer end. Under the end of a test-tube of dilute potassium permanganate acidified with hydrochloric acid. So long as sulphur dioxide issues, it will decolorise the manganate solution in the tube when the gas is caused to bubble through the upper half-inch of the solution. When the sulphur is all out, a drop of the solution from the flask is tested with ammonium sulphocyanide for ferric iron. When the reduction is complete the solution is cooled and titrated with permanganate. If

alumina is to be determined, the above-mentioned precipitate of the iron and aluminium phosphates can be treated with 150 c.c. of ammonium molybdate solution to precipitate the phosphoric acid, and filtered. In the filtrate, iron and alumina are precipitated as hydroxides by ammonia, filtered off, dissolved in hydrochloric acid, re-precipitated with ammonia, collected, ignited, and weighed. The two may then be separated by any of the well-known methods.

The filtrate from the iron and alumina precipitation contains the calcium sulphate. This solution is acidified with hydrochloric acid, and barium chloride added to precipitate the sulphuric acid. The barium sulphate is treated in the usual way, and calculated to calcium sulphate.

Calcium sulphide may be determined by treating 5 grms. of char with 20 c.c. of nitric acid and evaporating nearly dry, adding 20 c.c. of hydrochloric acid, and evaporating again very low to expel nitric acid, taking up in hydrochloric acid, and in an aliquot portion of the filtered solution precipitating the sulphuric acid in the usual way with barium chloride. From the weight of barium sulphate found is deducted that found as above, due to calcium sulphate. The remainder is that due to calcium sulphide.

The physical condition of the char is of great importance, and should be thoroughly examined. The grist is estimated by throwing 100 grms. upon a sieve of known mesh, shaking gently, and weighing what passes through. This portion may, in turn, be passed through successively finer sieves, and weighed after each. In shaking, the sieve should be tapped only very gently—otherwise particles of char will be forced through which correctly belong above.

To determine the density of the char it should be carefully filled into a weighed flask of 50 or 100 c.c. capacity, and of very gently sloping sides. Admitted into such a flask through a funnel, the char fills it completely without leaving vacant recesses at the shoulders. This is weighed, from which is calculated the specific gravity of the char when loose and the pounds per cubic foot. Now the flask is tapped lightly on the table, and as the char settles down more is added until no further settling takes place, and the flask is filled to the mark. This gives the weight of char when packed, from which may be calculated, as before, the specific gravity and weight per cubic foot.

As char grows old in use its porosity decreases and its specific gravity increases. It is sometimes desirable to know its porosity. To do this the weighed flask is filled with distilled water, the char introduced little by little, displacing part of the water from the flask. At the same time the water remaining displaces from the char its contained air, which rises in minute bubbles. The flask is tapped to pack the char, and when filled to the mark, is heated on the water-bath to expel all air. After cooling, the supernatant water is removed, and the flask and contents weighed. The increased weight over that of the flask packed with char is that of the contained water, from which can be calculated the capacity of the char for any liquid of known specific gravity.

The repeated handling which bone-black receives in continued use in sugar refineries, &c., tells on it very seriously, as the friction of the grains against each other and the machinery wear it into dust. This change is slow, but in the long run is very costly, as the fine dust has to be discarded and replaced by new char.

Any method, therefore, which would enable one to judge of the relative durability of samples of char under this continued friction should be worthy of consideration. I have attempted to contrive such a test, and after a good many experiments have found one which promises well. Twenty-five grms. of the char to be tested, between sixteen and twenty-four grist, approximately, are thrown on a sieve with circular holes, one-fiftieth of an inch in diameter, the sieve shaken back and forth ten times, tapped three times, and the shaking and tapping repeated twice. This drives the dust through, and it is weighed. Dust and char are then both put into a cylinder of tinned iron four inches in diameter and two inches deep; then six glazed porcelain marbles five-sixths of an inch in diameter, and weighing together 74.66 grms., are added. Now the can is shaken back and forth with slightly rotary motion 200 times, the marbles removed, and the char sifted as before. The increased weight of dust is calculated to 5 per cent. of the char used. These tests are pretty constant for different portions of the same sample of char.

The dust formed thus from a good new char was in three cases 1.72 per cent., 1.46 per cent., and 1.76 per cent. From another new char 2.68 per cent. and 2.44 per cent. Two grades made by one firm gave 2.16 per cent. and 2.16 per cent. in one case, and 2.86 per cent. and 2.87 per cent. in the other. Char which had been in use ten months, and whose softer parts had already been separated by use, gave 0.92 per cent. and 0.94 per cent., showing that it was then in a better wearing condition than when it first entered into use.

FIRE AT MONTON RUBBER WORKS.—This week a serious fire occurred at the Hille Rubber Works, situate at Monton, near Eccles. The loss is estimated at from £2,000. to £2,500.

FAILURE OF A MANCHESTER SOAP COMPANY.

AT the Manchester Bankruptcy Court, on Monday, before Mr. Registrar Atkinson, the affairs of the Combined Soap Company, of Hawkins-street, Hulme, and the Egerton Colour and Chemical Manufacturing Company, of Hargreaves-street, Hulme, were mentioned. A receiving order was made on December 13th last. The statement of affairs, which had been lodged by Mr. William Henry Horton, showed liabilities £954. and assets £618., leaving a deficiency of £336. Mr. Horton stated that he had no separate liabilities excepting one for £150., which was included in the joint statement. He also stated that he had no separate assets. The Official Receiver (Mr. Dibb) stated that efforts which it was hoped might have led to some arrangement had failed, and he had therefore to ask for an order for the trial of an issue as to whether two other gentlemen should be adjudicated bankrupts in connection with the companies named in the receiving order. It was understood when the matter was before Mr. Registrar Smith that he would not press the case until an opportunity had been afforded the parties of trying an issue whether the two gentlemen in question were partners or not. The Registrar directed that the issue should be tried before the Judge on the 20th inst. Mr. Thompson appeared for the petitioning creditor, Mr. Stead (Messrs. Broadsmith and Stead) represented the debtor, Horton, and Mr. R. A. Edgar appeared for the other gentlemen referred to.

THE QUALITY OF MANCHESTER WATER.

THE Water Works Committee some time ago commissioned Mr. Harold B. Dixon, M.A., F.R.S., Professor of Chemistry and Metallurgy, and Mr. A. Sheridan Delépine, M.B., B.Sc., Professor of Pathology and Morbid Anatomy, of Owens College, to examine and report upon the quality of the water supplied by the Corporation for domestic use. They have presented the following joint report:—

At the beginning of October last we were asked, in view of complaints made in certain districts, to examine and report upon the water supply of Manchester. Samples of water collected from the mains in different districts were examined by chemical methods on October 2nd, and found to be of good quality; the analytical results throw no light on the cause of the odour complained of. We therefore thought it desirable to make a special examination, both chemical and bacteriological, of the reservoirs supplying the district in which complaints had been made. Accordingly, on October 9th, we visited these reservoirs, and took samples of the water before its passage through the strainers. These samples were submitted to careful examination, and the results of our inquiry were communicated in a preliminary report. It will be sufficient to state here that the results of our tests made it questionable, in our judgment, whether the water in one of the Audenshaw reservoirs (which it was admitted had been filled in a season of scarcity with inferior water) could safely be used for the town's supply. In view of these facts, we were requested by the Committee to continue the examination of the water actually supplied through the city mains, not only from these reservoirs, but from the others supplying the various districts. In accordance with this request, on November 10th, we personally collected samples from the mains in the following localities:—1. Great Ducie-street, Strangeways. 2. Great Clowes-street, Broughton. 3. Crescent-road, Crumpsall. 4. Oldham-road, Newton. 5. Osborne-street. 6. Great Ancoats-street. 7. Rusholme-road, Chorlton-upon-Medlock. 8. Wilmslow-road, Withington. 9. Fair-lawn-street, Moss Side. 10. Chester-road, Hulme. These ten samples represent the waters from all the reservoirs supplying Manchester.

After an interval of three weeks, *i.e.*, on December 1, we again personally selected samples from the mains, bringing water from each of the sources. In every case the samples were submitted as soon as possible to chemical and bacteriological examination. We are thus enabled to report on the character of the water actually flowing in the mains in the several districts over a period of time, extending from October 2 to December 1. In no case have we found the amount of organic matter, or the number of bacteria, to exceed that usually present in good water. By the chemical examination it has been found that the quantity of organic matter in the water, tested both by the oxygen absorbed and by the albuminoid ammonia, was small in amount in all the samples. Between October 2 and December 1 some differences were observed, but none of large amount. On October 2 the water drawn in Moss Side and the water drawn in Hulme were both of "great organic purity," as far as chemical tests can show. On Nov. 10 the waters drawn at Withington and in Moss Side were "exceptionally pure," and the samples drawn in Rusholme-road and in Hulme were nearly as good. So far as chemical tests are of value, the Manchester water supply during this period must be pronounced to be satisfactory. In the bacteriological tests three analyses were made of

each sample taken for examination. The variations observed have slight, the highest number of bacteria found in any case being within the limits of what has been found in excellent waters. Several of bacteria have been isolated from the various samples examined, some of these bacteria are capable of multiplying very rapidly, giving to the water in which they grow an unpleasant taste and this occurs more especially when the water is not renewed sufficiently often, and may affect either large reservoirs or cisterns of private houses.

There was no very great difference between the samples of water obtained from the mains connected with various reservoirs. It was, however, found that when samples of all these waters were kept in closed vessels for some days, the growth of bacteria was much more rapid in some than in others. No bacteria associated with infectious diseases could be found in any of the specimens examined, although they were carefully searched for. The chemical and bacteriological examinations are in substantial agreement; both methods show that there is no sewage contamination of the water supply.

THE GAS SUPPLY OF LONDON.

THE quality of the gas supplied to the City of London for the week ending January 5th, 1895, was fairly good. According to the tests of Mr. J. Dibdin, chemist and superintendent gas examiner to the London County Council, the tests made at the various stations showed two deficiencies in illuminating power. The following figures have been prepared from the report, and show the average position of the gas calculated on the mean test:—

Company.	No. of districts tested.	Illuminating power (in stand. sperm candles).	Sulphur. Grains in 100 cb. ft.	Ammonia. Grains in 100 cb. ft.
		Mean average.	Mean average.	Mean average.
Gas Light and Coke Co.	14	16.37	10.13	0.3
South Metropolitan Gas Co.	6	16.5	13.81	0.31
Commercial Gas Co.	2	16.2	7.65	0.75

The supply for the week ending January 12th, 1895, was also good, there being two deficiencies in illuminating power. The figures calculated as above were:—

Company.	No. of districts tested.	Illuminating power (in stand. sperm candles).	Sulphur. Grains in 100 cb. ft.	Ammonia. Grains in 100 cb. ft.
		Mean average.	Mean average.	Mean average.
Gas Light and Coke Co.	14	16.35	10.08	0.25
South Metropolitan Gas Co.	6	16.4	11.3	0.33
Commercial Gas Co.	2	16.3	9.1	0.65

The standard gas supplied by these companies should have an illuminating power of 16 sperm candles, and contain not more than 4 grains of sulphur and 4 grains of ammonia per 100 cub. ft. of gas, on an average of three days with a pressure of one inch between sunrise and midnight, and six-tenths of an inch between midnight and sunset.

NOTICES.

LONDON AGENTS

Booksellers and Newsagents may now obtain supplies of "THE CHEMICAL TRADE JOURNAL."

From

MR. JOHN HEYWOOD,

2, Amen Corner,

On usual trade terms.

Paternoster Row, E.

FOREIGN REMITTANCES.

Owing to the inconvenience created by the various ways in which foreign subscriptions are remitted, we respectfully beg to inform our subscribers that a *Crossed MONEY ORDER* is the most satisfactory method of remitting, both for them and ourselves. In the case of a Money Order, a letter advising us of same should always be sent, otherwise, owing to post-office formalities, much delay in tracing and acknowledging foreign remittances is inevitably entailed in this way.

Readers are invited to forward items of intelligence, or cutting from local newspapers, of interest to the trades concerned.

Trade Notes.

FIRE AT A PAPER MILL.—A serious fire occurred last week in the engine-house at Messrs. Potter's Hollins Paper Mill, Darwen. The fire brigade were soon in attendance, and in about an hour the flames were got under. The engine-house was wrecked, the estimated damages amounting to several hundred pounds.

ANOTHER PETROLEUM LAMP FATALITY.—A fire occurred, on Monday, at 39, Cadogan-street, Chelsea, S.W., upon the portion of the premises tenanted by Mr. J. Colson, a lodger, and his wife. A mineral-oil lamp was accidentally upset in the front room on the ground floor, and Mrs. Colson, aged 33 years, was so much burnt on the body that it was necessary to remove her to a hospital, where she died.

GOLD PRODUCTION.—The Geldenhuis Main Reef Gold Mining Company report for December: Crushed, 3,400 tons; obtained from mill, 1,192 ounces; cyanide treated 2,350 tons, for 526 ounces; total, 1,718 ounces. The Wemmer Gold Mining Company, Limited, advises result of work done during December as follows: 5,146 tons crushed, yielding 4,090 ounces of gold, 40 stamps working 30 days; and from cyanide plant, 4,125 tons, yielding 876 ounces of gold.

MESSRS. BRYANT AND MAY, LIMITED.—The Directors, in the statement of accounts for the year ended 31st December, 1894, report that the net profits of the business during that period, added to the balance brought forward from last account, amount to £68,190. From this has to be deducted the interim dividend at the rate of 7s. 6d. per share for the first six months, paid 31st July, 1894, £30,000., leaving available for distribution a balance of £38,190. The Directors recommend payment of a dividend for the second six months at the rate of 8s. 9d. per share, £35,000., and to carry forward to the next account £3,190.

HEAVY FINES FOR MILK ADULTERATION.—At the Kensington Petty Sessions, this week, Thomas Felix Stephens, a dairyman, trading as the Deffiance Farm Dairy Company, of College-place, Chelsea, was summoned by the Chelsea Vestry for selling adulterated milk. The defendant sent a letter saying he was ill. Evidence was given by an inspector who took a sample of milk from the defendant's assistant, which was adulterated to the extent of 32 per cent. A statement of defendant's previous convictions showed that he had been fined in all £65. for adulteration. He had a number of businesses in London under different names. The magistrates fined him £20. and costs.

INSTITUTE OF CHEMISTRY.—The following candidates passed the examination held last month:—A. E. Bell, Owens College, Manchester, and Royal College of Science, South Kensington; C. S. Ellis, Owens College, Manchester, and University College, Aberystwyth; M. O. Forster (Ph.D., Leipzig), Finsbury Technical College; J. Lones, Mason College, Birmingham, and registered student under A. E. Tucker, F.I.C.; G. H. Russell, Yorkshire College, Leeds; W. H. Sodeau, King's College, London; W. L. Sutton, University College, London; and W. G. Young, University College, London, and registered student under W. C. Young, F.I.C.

THE NEW COMMERCIAL COURT.—Among the regulations which will come into force respecting the hearing of commercial causes by the new Commercial Court, it is laid down that commercial causes are to include causes arising out of the ordinary transactions of merchants and traders; also that mercantile causes may be transferred from the Chancery Division to the Queen's Bench Division, in accordance with the existing practice. A separate list of summonses in commercial causes will be kept at Chambers. A separate list will also be kept for the entry of such causes for trial, but no cause will be entered in such list which has not been dealt with by a Judge charged with commercial business. Summonses may be entered in the list on and after Wednesday, February 20th. These will be heard by Mr. Justice Mathew, who, on and after Friday, March 1st, will, until further notice, sit, as far as practicable, day by day for the despatch of commercial business.

THE PRICE OF GAS IN MANCHESTER.—At a well-attended meeting of the Gas Committee of the Manchester Corporation held recently, Mr. Alderman Gibson (the chairman) presiding, it was resolved to reduce the price of gas used for purposes other than lighting by 6d. per thousand cubic feet, that is to say from 2s. 6d. to 2s. This will be equal to a diminution of £11,000 a year in the revenue of the gas department, but it is hoped that the loss will be partially, if not entirely, counterbalanced by the increased consumption of gas for cooking, heating and motor purposes. Within the buildings of those who wish to take advantage of the lower price it will be necessary to furnish a separate meter and separate pipes. The announcement of the decision of the Committee will be received with favour by advocates of smoke abatement and others who see in the more extended use of gas for gas engine and cooking purposes the hope of an improvement in the atmospheric conditions of our large towns. At the same meeting of the Gas Committee the chairman brought forward a proposal for the abolition of meter rents, but this was rejected.

THE JULIA-TALTAL NITRATE COMPANY.—The Julia-Taltal Nitrate Company, Limited, has received a cablegram from Mr. Dixon Provand, the company's general manager at Taltal, stating that he commenced making nitrate on the 22nd ult.

THE DISPUTE IN THE TYNE CHEMICAL TRADE.—The dispute in the Tyne chemical trade seems likely to come to an end shortly by the workmen agreeing by ballot to accept a reduction of wages from 5 per cent. upwards, according to grade. The latest news on this matter, however, will be found in our "Tyne Chemical" Market Report.

SOCIETY OF CHEMICAL INDUSTRY: London Section.—The next meeting of this section will be held on Monday, February 4th, at 8 p.m., in the rooms of the Chemical Society, Burlington House, when a paper will be read by Mr. Lewis T. Wright, on "Some Matters of Interest in the Manufacture of Coal Gas."

THE TROUBLES OF IMPERFECT COMBUSTION.—An extraordinary incident occurred at the Parish Church at Hucclecote, near Gloucester, on Sunday morning. When the Litany was reached a girl screamed and fainted, and the commotion had hardly subsided when her sister fainted. Several ladies followed suit one by one, all being more or less affected by giddiness or sickness, and having to be assisted to the open air. The church was heated by coke stoves, the fumes from which were supposed to be responsible for the occurrence. The service came to an abrupt termination, and the evening service was not held.

THE RAVENHEAD GLASSWORKS, ST. HELENS.—It is understood that negotiations have been in progress for some time between the London and Manchester Plate-glass Company, whose works at Sutton and Ravenhead, St. Helens, were closed some months ago, and the old British Plate-glass Company, former owners of the Ravenhead Works, for the transfer of the latter buildings to the last-named company. It is stated that the liquidators of the London and Manchester Company have consented to relinquish their lease of the works on the payment of £16,000., and it is generally expected in the locality that the works will shortly reopen under the new management.

THE CITY AND GUILDS RESEARCH FELLOWSHIP.—The Executive Committee of the City and Guilds of London Institute have awarded the first Salters' Company's Research Fellowship for the encouragement of higher research in chemistry in its relation to manufactures to Martin O. Foster, Ph.D. Dr. M. O. Foster was a student at the City and Guilds Technical College, Finsbury, during three sessions (1888 to 1891), and subsequently graduated Doctor of Philosophy (*magna cum laude*) at the University of Würzburg. For several months he has been engaged in investigating some new derivatives of camphor in the Research Laboratory of the City and Guilds Central Technical College, and by the aid of the Salters' Company's Research Fellowship he proposes to pursue this line of work.

SOUTH AFRICAN NITRATE FIELDS.—Dr. R. Marloth, of Cape Town, writes, under date January 5, in reference to a cabled message published in *The Times*, of December 13th, giving a summary of Dr. Marloth's official report on the nitrate fields near Prieska, on the Orange River. The Cape Town correspondent stated in his message that no payable deposits of nitrates had yet been found, but that the results of the examination warranted a further search being made for richer beds. Dr. Marloth wishes this statement to be qualified by the additional statement that the report referred only to the farm of Doornbergfontein, which Dr. Marloth inspected in December, 1893, on behalf of the Cape Government, and that he never reported on any other farm in the district of Prieska.

UNIVERSITY COLLEGE, LIVERPOOL.—Electro-Chemical Department. The evening classes in this department are now arranged so as to afford a thorough course in both the principles and practice of electrical engineering. Experimental work has been rendered easier by the system of cable which connects the different rooms in the laboratory. A great want in the electrical industries in and near Liverpool would be supplied by the addition of a standardising and testing laboratory to be worked in connection with the present laboratory. The only laboratory at present available to the public is that under the charge of the Corporation. This department has lately received a distinguished honour by the award to Professor Oliver Lodge, in conjunction with Mr. Glazebrook, of the Elihu Thompson prize of 5,000 francs for a monograph on certain theoretical questions of interest to electricians.—**Chemical Department.** The work of advanced students is seriously hampered by the want of a large laboratory. A course of instruction is being arranged in electrolytic analysis, and in February lessons on glass blowing will again be given, it is hoped, by Herr Fitzman, when others besides college students may be admitted. On Monday, January 14th, Dr. J. L. Baily began the second course of Evening Penny Technical Lectures to working men. On January 31st Professor H. B. Dixon, of Owens College, will lecture on "Explosions," at the Students' Chemical Society.

per ton, bags, and 42s. 6d., casks, rails, makers' works. Salt-n still be had at low figures: 12s. 6d. and 15s. per ton, according to day's value. Chlorate of potash quiet at 5½d. per lb., ½d. per lb. Sulphate of copper steady at £15. 10s., f.o.b. Salts remain unchanged: white acetate, foreign, £24.; English, grey, £19.; brown, £16.; nitrate, £18. 10s. Prussiate of shows sign of weakness, but so far price has not declined: (English make) 10½d. per lb., foreign 10d., red is 4d., 9½d. per lb. Acetate of lime does not improve. Brown is £5. 15s., and grey £9. 10s. per ton. White powdered arsenic and price firm at £14. 7s. 6d. nett per ton, f.o.r. Garston. Soda steady at 8s. 9d. to 8s. 10½d. per cwt. Sulphocyanides barium 5d., ammonium 7d. per lb. Carbolic acids continue 1s. 9d. per gallon for 60° crude is still value to-day, and 5¼d. stal, 39/40°.

LIVERPOOL MINERAL MARKET.

The month and the year advances, both the demand and the prices have somewhat improved, and the tone of our market is much firmer. Manganese: Imports are slow, but stocks are and prices are, therefore, practically unaltered, both for the steel and iron trades. In ground manganese there is a steady rise, and it is moving freely at £6., £8., £10., and £12. 10s., according to quality. Manganiferous ore is somewhat firmer, and are practically unaltered, being 16s. to 17s. 6d. per ton, c.i.f., in 1s. for good quality. Bauxite, Irish Hill brand, continues in demand at 20s. for first quality, 16s. for second quality, and 13s. for third. Chrome ore: Arrivals have been slow and stocks are in demand is strong, and the prices are firm, with an upward tendency at 65s. to 70s. for 40% ore, and 110s. to 115s. for 50% ore. There are more arrivals to report, but as they have gone straight into consumption, prices are unaltered, whilst the demand continues good. "Angel White" and "Gold Medal" brands, 80s., 90s., and 110s. per ton, according to quality. Barytes is in demand: carbonate, smalls, 65s. to 75s.; lump, 90/95%, £5.; white is brisk, especially for good well-ground qualities: No. 1 at No. 2 at 57s. 6d. to 60s., No. 3 at 45s. to 50s.; brown at 40s. and scheelite are unaltered. Tungsten metal 2s. 3d. per lb. Ferro tungsten 2s. per lb. Magnesite: 35s. to 40s., in cargoes, small quantities from stock, 40s. to 45s.; raw ground, £6.; red ground, £10. 10s. to £12. 10s., according to quantity. Barytes continues in brisk demand at £5. to £6. for foundries' uses, and better qualities at £8. to £10. per ton. Arsenic continues scarce at £15. to £16. 10s. Fullers earth is steady, French J.C., 60s.; other brands according to quality.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

Oil.—Palm oil keeps very quiet, and the only business reported in Accra, at £19. 5s. to £19 per ton. There is a fair request for it at steady prices. Owing to the firmness of sellers for ship- prices may soon show an advance. Linseed keeps steady, and makes in export casks being quoted 21s. to 22s. per cwt. Linseed is quiet, Liverpool refined offering at 18s. to 18s. 9d. Castor oil is pretty well inquired for, and quotations for seconds Calcutta are 2½d. to 2¾d. First pressure French, 2d. per lb. There is no change in the price of tallow, though has been a quieter tone in the market during the past few days. There is a fairly good demand for spot, and prices keep steady. Spirits continue to be firmly held at 21s. 6d. per cwt., as the demand is steady. Petroleum is firm at 4½d. to 5½d. for American, and 4½d. per gallon for Russian refined. Colours are steady, without alteration in prices. Oxidation, common, £10., medium, £12., best, £15., shire, common, 40s.; medium, 50s., best, 60s.; Welsh, best, 50s., and common, 18s.; Irish, Devonshire, 40s. to French, J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Umber: ash quiet; Devonshire, 50s. to 55s. White lead, £16. Red lead, Venetian red, £6. to £10. Cobalt: Prepared oxide, black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2, 1s. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Oxide, £22. 10s. to £25.

THE METAL MARKETS.

IRON, WEDNESDAY.—Pig iron, dull: Scotch warrants closed at 2d., Middlesbrough 34s. 3½d. cash, and hematite 42s. 4½d. per, quiet: Chili bars, G. O. B.'s and G. M. B.'s, closed at 6s. 3d. to £40. 11s. 3d. cash, and £40. 13s. 9d. to £40. 18s. 9d. months. Tin, steady: Straits closed at £60. 12s. 6d. to £61. 2s. 6d.

cash, and £60. 12s. 6d. to £61. 2s. 6d. three months; Australian, £60. 15s. Lead: English, £64. to £64. 10s. Silesian spelter, ordinary: £14. 2s. 6d. Nickel, 1s. 3d. Antimony, £32. 10s. Quicksilver: first hands, £6. 12s. 6d.; second hands, £6. 10s. 6d. Copper shares, quiet: Cape, 1½ to 1¾; Copiapo, 1¾ to 1¾; Libiola, 3¼ to 3½; Mason and Barry, 1¾ to 2; Rio Tinto, 13½ to 13½; Tharsis, 4¾ to 4¾.

GLASGOW, WEDNESDAY.—Market steady, with good business. Scotch done at 41s. 2d. cash, also at 41s. 3½d. and 41s. 4d. one month; closing with buyers at 41s. 2d. cash, sellers ask 41s. 2½d. Cleveland done at 34s. 3d. and 34. 4d. cash; closing with buyers at 34s. 3½d. cash, sellers ask 34s. 4½d. Cumberland hematite closes with buyers at 42s. 3½d. cash, sellers ask 42s. 4½d. Middlesbrough hematite closes with buyers at 41s. 4d. cash, sellers ask 41s. 5d. Copper done at £40. 15s. three months.

WOLVERHAMPTON, WEDNESDAY.—Negotiations show slight expansion, and tone of trade better. Export orders a trifle more numerous, but prices unaffected. Marked bars £7., merchant iron £5. 15s. to £6., and common bars £5. 5s.; black sheets doubles £6. 5s. upwards, and latters £7. Galvanised corrugated sheets irregular. Hoops £6. to £6. 5s., and nailrods £6. 15s., nominal. Japanners' steel trunk sheets £8. doubles, and £8. 15s. latters. Staffordshire best pig iron 52s., and Derbyshire grey forge 38s.

TYNE CHEMICAL REPORT.

TUESDAY.

In the chemical trade there is now every prospect of an early resumption of work at the principal Tyne manufactories, as the dispute was finally settled on Wednesday, and in consequence there is somewhat more inquiry. Prices, however, remain unaltered, and quotations generally are as under:

Bleaching Powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, nett; caustic soda, 76/77%, £9. 10s. per ton, nett; do., 70%, £8. per ton, nett; recovered sulphur, 2 cwt. bags, £4. per ton, nett; soda ash, 48%, £3. 15s. per ton, nett; do., 52%, £4. 2s. 6d. per ton, nett; do., 56%, £4. 10s. per ton, nett; alkali, 36%, £2. 15s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. 15s. per ton, nett; do., 52%, £5. 5s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £5. per ton, nett; do., 1 cwt. kegs, £5. 10s. per ton, nett; silicate of soda, 75° Tw., £2. 17s. 6d. per ton, nett; do., 100° Tw., £3. 12s. 6d. per ton, nett; do., 140° Tw., £4. per ton, nett; soda crystals, casks, £1. 16s. 6d. per ton, nett, gross weight; do., 2 cwt. bags, £1. 16s. 6d. per ton, nett; chlorate of potash, 5½d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £4. 2s. 6d. per ton, nett; blanc fixe, £7. 10s. per ton, nett; chloride of barium, £7. 10s. per ton, nett; carbonate of alumina, £28. 15s. per ton, nett; aluminate of soda, £33. 15s. per ton, nett; in 5 ton lots, £28. 10s. per ton, nett.

SALT.—South Durham salt is steady, at 9s. 6d. per ton, f.o.b. Tees.

COALS.—There is a steadier and increased demand for household coal, but other classes of fuel are dull, and prices for prompt shipment are very irregular. Best Northumbrian steam, 9s. per ton; second qualities, 8s. 3d. to 8s. 6d. per ton; small steam, 3s. to 3s. 6d. per ton; household coals firm, 10s. to 11s. 6d. per ton; bunker coals dull: unscreened, 6s. 9d. to 7s. per ton; do., screened, 9s. per ton; gas coals steady, 7s. 3d. to 7s. 9d. per ton. Coke quiet, at 13s. to 13s. 6d. per ton.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

The extravagance of the past ten days or so over the reputed salvation of the paraffin and mineral oil industries of Scotland, has pretty well spent itself by this time, thanks to the cold douche administered by that special portion of the press which had not lost its head. It is probable there will be the practical trial of some working agreement between the Scotch Companies and the American Standard, as affecting the paraffin scale only, and at a slight advance over present low price; but whether such an agreement will hold water or not remains to be seen. It is not even fully forged yet, and prices are in no way affected. Even if completed, and permanently successful, the advantage to the Scotch industry would be comparatively trifling. In this section paraffin spirit (naphtha) has again dropped, and is now down to 5d., and probably procurable in places below that. Burning oils are still in heavy delivery at contract price, as below:—

Sulphate of ammonia seems to steadily gain week by week again, and the views of the makers to-day for prompt are firm at about £11. 8s. 9d. to £11. 11s. 3d. There seems at the moment to be no movement in forward business.

In the market for general chemicals there is as yet no improvement discernible; only the smallest prompt business, and no enquiry at all

for forward. Dye chemicals also very quiet. So poorly booked forward are some of the Scotch dyeworks that they have barely resumed yet, after the holiday close.

Chief prices current are:—Soda crystals, 36s. nett, Tyne; white alkali, 48/52, £4 10s. to £5 5s. nett, Tyne; alum in lump, £5 10s. nett, Glasgow; caustic soda, white, 74° £9. 70/72° £8. 60/62° £7. 2s. 6d., and cream 60/62° £7., all nett, Liverpool; bleaching powder, £7. 9s. nett, Tyne; salicake, 17s. 6d.; borax, English refined, £20s., and domestic acid, £30s. nett, Glasgow; bicarbonate of soda, 5-cwt. casks £6 10s., and 1-cwt. casks £6 15s. nett, Liverpool; bichromate of potash, 4 1/2 d. nett, for Scotch and English deliveries (for export, 4 1/2 d. nett, f.o.b. Glasgow); bichromate of soda, 3 1/4 d. nett, for Scotch and English deliveries (for export, 3 1/4 d. nett, f.o.b. Glasgow); chloride of potash, 5 1/4 d. less 5%, Liverpool; nitrate of soda, 9s.; sulphate of ammonia, £11. 8s. 9d. to £11. 11s. 3d. prompt, f.o.b. Leth; oil-ammonium, first and second white, £39 and £37. nett, any port; sulphate of copper, £15. 10s. less 5%, Liverpool; paraffin scale, hard 1 1/2 d., and soft, 1 1/4 d. to 2d. per lb.; paraffin wax 120° semi-refined, 2 1/2 d.; paraffin spirit (naphtha), 5d. per gallon; paraffin oil (burning), standard No. 1 grade, 4 1/2 d. at works, for Scotch buyers (English sales, 3/4 d. to 3/4 d. lower); ditto (lubricating) 865° £4. 5s.; 885° £4. 10s., and 890-895° £5. to £5. 10s. Week's imports of sugar at Greenock were 15,711 bags.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—The weather here, which has been very stormy with heavy downfalls of snow, seems to check business a good deal, which, under ordinary circumstances, cannot be called brisk. The imports all round continue to show a decline, and are, compared with the same period during 1904, as follows: Linseed, 17,867 qrs. against 61,894 qrs.; rapeseed, 12,715 qrs. against 16,686 qrs.; cottonseed, 19,355 tons against 24,317 tons; olive oil, 904 casks against 1,446 casks; rape oil, 643 casks against 764 casks; oilcakes, 1,693 tons against 3,003 tons; tallow, 1,399 cwt. against 2,688 cwt.; turpentine, 2,967 barrels against 1,489 barrels. Linseed oil about 5s. per ton lower, closing steady at 19s. 3d. naked spot; February-April offers at 19s.; May-August, 18s. to 18s. 1 1/2 d.; September-December, 18s., sellers. Boiled and refined, from £1. to £2. per ton extra. Export for the week, 740 cwt. Refined cotton oil also easier. Spot closes dull, at 19s. 10 1/2 d.; naked and February-April offer at 16s. 3d.; May-August, at 16s. 10 1/2 d. to 16s. 9s.; crude, on the spot, offers at 14s. 4 1/2 d. naked. Cakes, 17s. 6d. per ton, and ordinary barrels 25s. per ton extra. Export of refined for the week, 4,960 cwt. Spirits of turpentine, 20s. 3d. per cwt. Castor oil, first pressure, 2 1/2 d. per lb. "Vergaline," a new vegetable butter, sweet, white, and neutral, for culinary and confectionary purposes, £29. per ton. Cod oil quiet, £16. to £18. per ton. Soft soap, 14s. 6d. per cwt. Sod oil, for carriers, etc., £15. to £22. per ton. Boiled drying oil, £13. per ton. Engine and cylinder oils, £12. to £24. per ton.

CAKES.—A somewhat better feeling for spot and near deliveries, and being by no means plentiful, 95% pure, £6. 7s. 6d. to £6. 12s.; Russians, £6. 2s. 6d. to £6. 7s. 6d. Oil cakes, £5. 7s. 6d. Cotton cakes steady: best makes, £3. 10s.; seconds, £3. 7s. 6d. Rape cakes: best, £4. 2s. 6d.; Black Sea, £2. 12s. 6d. per ton.

PAINTS.—Prices and markets about in the same condition, and are:—Venetian red, £3. 15s. per ton; oxide of iron from £7. to £18. per ton; blue black, £4.; mineral black, £4. 5s.; and yellow ochre, £3. 15s. per ton. Ultramarines from 3d. to 8d. per lb. Lime blue from £26. per ton. Venetian red, oxide of iron, black, blue, green, and yellow ochre paints can be bought from £12. per ton. White lead, in oil, £17. per ton. Red lead, £13. 10s. Paint remover from 19s. to 30s. per cwt. Ready-mixed paints from £25. per ton. Oil varnish from 5s. 6d. per gallon. Copal varnish, from 7s. Brunswick black, from 4s. per gallon.

Acto Companies.

Dennis Amoxic Manufacturing Co., Ltd.—CAPITAL, £15,000., in £1. shares. This company has been formed to adopt a certain agreement made between the British Land and Industrial Co., Ltd., and Clive Bush, and to work mines and properties of all kinds. The subscribers to the memorandum of association are: J. M. Ross, 42, Sydenham Park, S.E. gentleman; H. Bond, 45, Wendell-road, W., accountant; H. C. Ewer, Stockwell, commercial traveller; A. Smeaton, 117, Lady Margaret-road, N.W., clerk; C. Bush, Moorgate-street, E.C. gentleman; J. M. Thom, 110, Clarence-road, Clapton, gentleman; M. Bush, Clarendon Park, N., commercial traveller.

W. H. and F. Phelps and Co., Ltd.—CAPITAL, £3,000., in preference shares of £1. each and 1,000 ordinary shares of £1. This company has been formed to purchase the business of W. H. Phelps and Co., of Gomersal, and to carry on the trade of waste, silk, rag, and hurr extractors, shoddy and flock manufacture and wool dyers, etc.

London Chemical Co., Ltd.—CAPITAL, £10,000., in £1. shares. This company has been formed to adopt an agreement, and to carry on the business of chemical manufacturers, druggists, dyers, salters, and colour men, etc. The subscribers to the memorandum of association are: E. J. Ellis, Bow Bridge Wharf, Stratford, E., chemical manufacturer; J. J. Hatchman, Bow Bridge Wharf, chemical manufacturer; G. Fox, 3, Salter's Hall-court, E.C., solicitor; H. Lafone, 3, 5 Hall-court, E.C., solicitor; T. H. Horwood, 3, Salter's Hall E.C., solicitor; B. Jackson, 28, Fenchurch-street, chartered accountant; A. J. MacMillan, 3, Salter's Hall-court, secretary.

Incandescent Development and Fluid Supply Co., Ltd.—CAPITAL, £400,000., in £1. shares. This company has been formed to enter into an agreement with several persons and the Incandescent Gas Light Company for the purchase of certain property, and to carry on the business of an assets realisation company. The subscribers to the memorandum of association are: G. de la Poer Beresford, tenham, major-general; J. J. L. Moeller, 2, Queen's Park Gardens, Streatham; C. Jones, 5, St. John's Park, Blackheath, major; Feiling, Southgate, broker; L. de Fonblanque, 14, Palmer Westminister, secretary; W. Morgan, 37, Jermyn-street, solicitor; Stoop, 4, Hercules-passage, E.C., stock broker.

London Sanitary Protection Association, Ltd.—CAPITAL, £10,000., in £10. shares (500 preference and 500 ordinary). This company has been formed to acquire all or any of the rights, property or assets of the London Sanitary Protection Association, and to carry on the work carried on by this association in every way. The subscribers to the memorandum of association are: T. Holm, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

The Patent List.

This list is compiled from Official sources in the Manual Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT

Smoke Consuming Furnace. A. Watt. 851. January 14.
Manufacture of Gold Solvents. J. J. Hood. 882. January 14.
Making Liquid Ammonia by Electricity. R. W. Hill. 883. January 14.
Removing Tar, Pitch, and other Stains from Fabrics. K. Balatsch and A. Payer. 941. January 15.
New Material for Obtaining Oxygen from Air. H. Weymersch. January 15.
Aluminium Solder. J. G. Lorraine. 967. January 15.
Preparation of Sulphocyanides. A. Goldberg and W. Siepermann. January 15.
Manufacture of Acetic Acid. E. G. Scott. 994. January 15.
Apparatus for Collecting and Analysing Gases. V. G. Waller. January 15.
Protecting, Dyeing, and Hardening Wood. A. Heime. 1,069. January 15.
Extracting Gold, Silver, and Antimony from their Ores. H. R. and J. Armstrong. 1,148. January 17.
Artificial Stone. C. M. Briss. 1,167. January 17.
Manufacture of Sulphuric Acid. U. F. Becker. 1,168. January 17.
Improvements in Filters. C. Hind. 1,183. January 18.
Manufacture of Phosphates for Manure. J. E. Stead. 1,212. January 19.
Removing Fatty Matters from Wool-Scourers' Effluents. W. 1,222. January 19.
Smokeless Furnace. C. A. Jensen. 1,330. January 19.
Improved Solvents for Gold and Silver in the Extraction of 1 A. Zimmermann. 1,335. January 19.
Artificial Fuel. J. A. Macmillan. 1,334. January 19.
Manufacture of Carbide of Calcium. D. B. Morison. 1,344. January 19.
Utilizing Liquors from Chlorination—Roasted Ores or 1 H. Bremer. 1,348. January 19.

Gazette Notices.

PARTNERSHIPS DISSOLVED.

B. GIBSONS and W. P. GIBSONS, Didsdale, Staffordshire, manufacturers of 1 goods, under the style of Benj. Gibbons, Jun.
J. CROOKERY and H. TYNDALE, paint and colour manufacturers, Ripley, 1 style of the Milland Paint and Colour Co.

IMPORTS OF CHEMICAL PRODUCTS

AT THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending January 19th.

Acetate —	U. States, 676 pkgs.	Lister & Biggs
Acetic Acid —	Holland, 80 pkgs.	Beresford & Co.
	" 209	A. & M. Zimmermann
	" 40	Phillips & Graves
Acetone —	Holland, 10 pkgs.	A. & M. Zimmermann
Alkali —	Germany, 21 pkgs.	L. & I. D. Jt. Co.
Aniline —	U. States, 6 pkgs.	L. P. D. Co.
Antimony —	Newcastle, N.S.W., 40 c.	Vivian, Younger & Co.
	" 42 t.	James & Shakespeare
	Singapore, 45 t.	Pillow, Jones & Co.
Asbestos —	Germany, £25	Craven & Co.
	Italy, 10	W. Dick
	" 83	Imperial Asbestos Co.
Barytes —	Germany, 20 cks.	O'Hara, Matthews & Co.
	Belgium, 25	J. L. Lyon & Co.
	Germany, 20	Steinhoff, Sons, & Co.
	" 76	D. Storer & Sons
	Belgium, 19	S. H. Willoughby
	Belgium, 108	Harrison & Co.
Bromine —	Germany, 20 pkgs.	A. & M. Zimmermann
Caoutchouc —	Zanzibar, 9 c	Clarke & Smith
	Madagascar, 68	Blyth, Greene & Co.
	Zanzibar, 21	Arbuthnot, Ewart, & Co.
	E. Indies, 77	L. & I. D. Jt. Co.
	" 68	"
	" 30	A. Lawrie & Co.
	France, 27	Girard & Co.
	C. America, 7	R. G. Hall & Co.
Castor Oil —	France, 3 brls.	Lucas & Spencer's Wf, Ltd.
	" 30	Beresford & Co.
	" 42	40 cks. J. T. Morton
	Italy, 10 cs.	Hodgkinson, Preston & Co.
	" 20	Beresford & Co.
	Belgium, 5 brls.	"
	China, 35	Lucas & Spencer's Wf, Ltd.
	France, 30 cks.	J. Greig
Caustic Potash —	Belgium, 25 c.	Petri Brs.
Caustic Soda —	Holland, 4 c.	J. Barber & Co.
Chemicals (otherwise undescribed)	Germany, 4 pkgs.	Phillips & Graves
	Holland, 26	Beresford & Co.
	" 12	J. Owen
	Belgium, 3	T. Palmer
	Germany, 47	A. & M. Zimmermann
	" 51	F. Smith
	Norway, 17	A. P. Morris
	Holland, 46	J. Barber & Co.
Cream of Tartar —	Holland, 18 pkgs.	Kirkpatrick & Co.
	Italy, 19	Union L. Co.
	" 20	Howards & Co.
	France, 1	B. & F. Wf. Co.
Dextrine —	Germany, 100 pkgs.	H. Lorenz
Dyestuffs —	Annatto	
	Ceylon, 30 pkgs.	H. A. Litchfield & Co.
	E. Indies, 12	Brown & Elmslie
	Argols	
	Italy, 300 pkgs.	Thames S. T. & L. Co., Ltd.
	Sydney, 5	Lewis & Peat
	Cochineal	
	Canaries, 25 pkgs.	Marshall & French
	Gutch	
	Rangoon, 100 pkgs.	Arracan Co., Ltd.
	Extracts	
	U. States, 50 pkgs.	Beresford & Co.

Belgium, 19	L. J. Levinstein & Sons
" 30	Leach & Co.
U. States, 53	W. Burton & Sons
France, 19	B. & F. Wf. Co.
Gambier	
E. Indies, 220 pkgs.	E. Boustead & Co.
" 1,986	L. & I. D. Jt. Co.
" 1,553	Adamson, Gillfillan & Co.
" 474	Beresford & Co.
Indigo	
E. Indies, 76 cts	Wrightson & Son
" 24	H. Johnson & Sons
" 19	F. Huth & Co.
" 17	Arbuthnot, Latham & Co.
" 5	Parsons & Keith
" 7	J. Owen
" 53	J. Hatton, Hall & Co.
" 10	F. W. Heilgers & Co.
" 3	Ross & Deering
" 27	Elkan & Co.
Spain, 10	Parsons & Keith
" 15	P. & O. Co.
" 26	Parry & Co.
" 7	Croisdale & Co.
" 23	R. Von Glehn & Sons
" 34	Park, Macfadyen & Co.
" 45	Langstaff & Co.
" 44	L. & I. D. Jt. Co.
" 51	T. Barlow & Bro.
" 8	E. Bower & Co.
" 94	Patry & Pasteur
" 48	J. Kenyon & Sons
" 12	Lyall, Anderson & Co.
Logwood	
B.W.I., 190 t.	A. Hagan
Myrabolams	
Spain, 2 000 pkgs.	P. & O. Co.
Saffron	
Spain, 1 pkge.	Hodgkinson & Co.
" 1	H. R. Boyer
Shumac	
Italy, 500 pkgs.	W. Shelcott
" 100	Sollas & Sons
" 450	A. Slater & Co.
" 720	J. Kitchen, Ltd.
" 200	S. Barrow & Bro., Ltd.
" 450	Beresford & Co.
Turmeric	
E. Indies, 65 pkgs.	J. P. Alpe & Co.
Valonia	
A. Turkey, 268 t.	A. & W. Nesbitt
" 1	J. Graves
" 25	Boutcher, Mortimore, & Co.
Farina —	
Holland, 250 pkgs.	R. G. Hall & Co.
French Chalk —	
Austria, £115	Taylor Brs.
Glucose —	
U. States, 400 pkgs.	2,250 c. T. M. Duche & Sons
" 2,507	2,507 c. L. Sutro & Co.
" 2,250	2,350
" 500	500
" 250	1,080
" 100	474
" 50	250
" 1,846	2,971
" 500	500
France, 100	100
" 200	200
" 400	400
Lead Acetate —	
Germany, 38 pkgs.	F. Boehm
Magnesium Borate —	
Germany, 10 pkgs.	Petri Brs.
Manganese Ore —	
Germany, 3 t.	Phillips & Graves
Manure —	
Germany, 50 t.	Perkins & Homer
Belgium, 50	Anglo-Contl. G. Wks.
Germany, 130	D. de Pass & Co.
Holland, 5	H. & E. Albert

Channel Is, 38	J. Gibbs & Co.
France, 15	J. Burnett & Sons
Belgium, 50	C. A. & H. Nichols
E. Indies, 250	A. Hunter & Co.
Argentina, 40	Anglo-Contl. G. Wks.
Methyl Alcohol —	
U. States, 10 brls.	Pinchin, Johnson, & Co.
Mica —	
Ceylon, £25	W. M. Smith & Sons
Molasses —	
U. States, 500 pkgs.	2,714 c. J. Newcomb
Ochre —	
Spain, 113 cks.	Page, Son, & East
France, 16	N. J. Fenner & Co.
" 10 brls.	L. & I. D. Jt. Co.
Paraffin Wax —	
Germany, 10 brls.	H. Hehl
U. States, 480	H. Hill & Sons
" 200	Prod. Brokers' Co.
Phosphate Rock —	
Belgium, 200 t.	D. de Pass & Co.
" 60	H. & E. Albert
" 10	Anglo-Contl. G. Wks.
" 185	West & Penrose
France, 250	Anglo-Contl. G. Wks.
Pitch —	
N. Russia, 365 cks.	Fellows, Morton, & Co.
France, 9 pkgs.	Hernu, Peron, & Co.
" 4	E. Bennett
U. States, 10	Van Gulkerken & Co.
Plumbago —	
Ceylon, 158 brls.	Elkan & Co.
" 125	Craven & Co.
Holland, 57 cks.	B. Gallaway
Potash —	
U. States, 178 c.	Charles & Fox
Potassium Carbonate —	
Germany, 221 c.	F. Boehm
" 20	M. D. Co.
France, 203	Charles & Fox
" 12	J. A. Reid
Potassium Chlorate —	
Germany, 282 pkgs.	Coml. L. Co.
Potassium Oxymuriate —	
Sweden, 100 pkgs.	G. Boor & Co.
Potassium Sulphate —	
France, 500 pkgs.	F. W. Berk & Co.
" 1,000	Anglo-Contl. G. Wks.
Pumice Stone —	
Italy, 1½ t.	Blundell, Spence, & Co.
" 2	Tillyer & Co.
" 2½	G. W. Largen
Pyrites —	
Spain, 1,060 t.	Naylor, Benzon, & Co.
Salammoniac —	
Holland, 1 pkge.	Phillips & Graves
Saltpetre —	
Germany, 99 cks.	P. Hecker & Co.
" 40	J. Hall & Son
Germany, 4	Petri Brs.
E. Indies, 1,080 bgs.	Ralli Brs.
" 538	Lucas & Spencer's Wf, Ltd.
Germany, 3 pkgs.	3 cks. Brown & Elmslie
Silica —	
Germany, £200	A. Haacke & Co.
Starch —	
Germany, 41 pkgs.	Phillips & Graves
Holland, 112	G. Rahn & Co.
" 112	Taylor Brs.
Belgium, 260	T. H. Lee
U. States, 355	F. Claydon & Co.
" 143	Prop. Scott's Wf.
" 109	Horne & Co.
France, 40	A. Dunn
Belgium, 48	Leach & Co.
" 240	Sawer, Sons, & Co.
" 110	Prop. Scott's Wf.
Holland, 1,174	Little & Johnston
Germany, 2,170	Horne & Co.
Stearine —	
France, 80 bgs.	H. Hills & Sons
" 120	Bennett S. S. Co.
Belgium, 101	H. Hills & Sons
Sulphur —	
Italy, 250 t.	T. Farmer & Co., Ltd.

Tartaric Acid —	
Holland, 3 pkgs.	F. C. Devon & Co.
" 3	J. Owen
" 38	Kirkpatrick & Co.
" 20	B. & F. Wf. Co.
Ultramarine —	
Germany, 8 cks.	Blundell, Spence, & Co.
Holland, 2	6 cs. G. Rahn & Co.
Belgium, 4	Leach & Co.
" 13	F. Claydon & Co.
Yarnish —	
U. States, 3 pkgs.	Pinchin, Johnson, & Co.
" 10	Allan Brs. & Co.
" 13	Smellie & Co.
Verdigris —	
France, 1 pkge.	F. Allen & Sons
" 2 brls.	C. F. Gerhardt
White Lead —	
France, 13 cks.	J. Watts & Sons
Germany, 69	Randall Bros.
Holland, 10	Phillips & Graves
France, 12	M. Ashby, Ltd.
Holland, 20	Randall Bros.
Belgium, 2 brls.	J. L. Lyon & Co.
Wolfram Ore —	
Singapore, 1 t.	Major & Field
Wood Pulp —	
Germany, 620 pkgs.	E. J. & W. Goldsmith
Zinc Oxide —	
Holland, 70 pkgs.	Prop. Dowgate
" 500 cks.	Saunders & Sons
LIVERPOOL.	
Week ending January 17th.	
Acetate of Lime —	
Nantes, 154 bgs.	R. J. Francis & Co.
New York, 821	
Rouen, 320	Co-op. W'sale Society, Ltd.
Acetic Acid —	
Rotterdam, 10 balloons	
Albumen —	
Marseilles, 20 cs.	
Alumina Sulphate —	
Rotterdam, 15 cks.	
Ammonia —	
New York, 30 cylds.	
Asbestos —	
Genoa, 6 cs.	
Barytes —	
Bremen, 120 cks.	50 bgs.
Antwerp, 57	50
Benzine —	
Philadelphia, 250 brls.	Anglo-Am. Oil Co.
Binobenzol —	
Stockholm, 2 cks.	
Bone Meal —	
Bombay, 2,000 bgs.	
Boracic Acid —	
Leghorn, 12 cks.	Pickford & Co.
Caoutchouc —	
Hamburg, 6 bls.	Browne, Geveke & Co.
Castor Oil —	
Leghorn, 35 cs.	
Marseilles, 12 brls.	J. J. Mack & Son
Venice, 590	
" 12 cs.	
Chrome Ore —	
Volo, 300 t.	G. G. Blackwell & Sons
Cod Oil —	
Hamburg, 15 brls.	
Cottonseed Oil —	
N. Orleans, 1,122 brls.	
Cream of Tartar —	
Barcelona, 5 hds.	
Marseilles, 9 cks.	
Dyestuffs —	
Cochineal	
Gd. Canary, 5 bgs.	G. S. Bruce
" 4	S. L. Behrend & Co.

Cutch Singapore, 700 bxs. Ocean S. S. Co	
Extract Philadelphia, 23 brls.	
Genoa , 12 cs.	
Trieste , 355	Oak Extract Co., Ltd.
Ghent , 20 cks.	
Marseilles , 103	S. W. Nichols & Co.
Bordeaux , 200	
Rouen , 200 cks.	Co-op. W'sale Society, Ltd.
250	
Putie Philadelphia, 5 brls.	
New York , 107 5/8.	E. Brownhill & Co.
Carthagena , 845 ps.	Leech, Harrison & Co.
Gambier Singapore, 7,785 bls.	1,867 bgs.
Madder Smyrna, 20 bls.	
Marseilles , 5 cks.	
Myrsolams Bombay, 667 bgs.	
Orchella Lisbon, 16 bdls.	A. Barbosa & Co.
Saffron Valencia, 2 cs.	
Sumac Palermo, 1,100 bgs.	50 bls.
150	J. Kitchin, Ltd.
Barcelona , 100	
Valencia Patras, 121 bgs.	S. Levy & Co.
994	C. E. Papayanni & Co.
Syria , 760	Agelasto & Co.
300	A. C. Cozzifachi
993	
Smyrna , 6,916	469 kntls.
Syria , 669	Papayanni & Jeremias Barry Bros.
Smyrna , 170 t.	
Farina Trieste, 100 bgs.	Kuchles & Co.
Marseilles , 1,025 bls.	
Glucose New York, 349 brls.	
Lamp Black Philadelphia, 10 brls.	Morris Ashby, Ltd.
Antwerp , 38 cks.	
Limestone Antwerp, 1 cs.	
Magnesite Trieste, 960 bgs.	Francesco Parisi
Manganese Ore Bayonne, 1,250,000 kilos.	
Mineral White Trieste, 50 bgs.	F. Parisi
Naphtha Philadelphia, 4,665 brls.	Anglo-Am. Oil Co.
Ochre Marseilles, 15 bls.	
Paint Boston, 20 cs.	
Alexandria , 20 tins.	2 cks.
	Blacklock & Macarthur
Paraffin Scale Philadelphia, 70 brls.	320 cs.
New York , 256	Standard Oil Co.
Phosphate Antwerp, 250 t.	
Treport , 279	
St. Valery , 550	19 bgs.
Phosphate Rock N. Orleans, 1,013 t.	
Potash Antwerp, 21 dms.	
Portland , 9 brls.	
Potassium Carbonate Rouen, 57 cks.	Co-op. W'sale Society, Ltd.
Pumice Stone Messina, 20 brls.	40 bgs.
Pyrites Hoelva, 1,746 t.	
3,006	Matheson & Co.
Saltpetre Hamburg, 15 brls.	40 kgs.
20 cks.	
Soap Leghorn, 30 bxs.	Flinn, Main & Co.
Naples , 86 cs.	Bahr, Behrend & Ross

Hamburg , 50	
Boston , 2	Evans, Sons & Co.
Marseilles , 1	C. C. Bigge & Co.
N. Orleans , 1,939 brls.	
Soapstone Genoa, 900 bgs.	G. Huntriss & Co.
"	500
"	W. Harrison & Co.
Soda Crystals Rouen, 12 cks.	Co-op. W'sale Society, Ltd.
St. Nazaire , 10 cks.	
Starch Hamburg, 160 cs.	
Antwerp , 210	
Rotterdam , 120	
Stearine Marseilles, 17 bgs.	
Antwerp , 25	
Sulphur Catania, 1,010 bgs.	283 cks.
Tartar Naples, 4 cks.	
Bordeaux , 10	
Tartaric Acid Rotterdam, 5 cks.	
Treacle New York, 1 cs.	10 brls.
	Maple Syrup Co.
	J. Valley
Portland , 50	
Turpentine Savannah, 2,328 brls.	
Yarnish New York, 3 bdls.	
Wood Pulp Christiania, 2,478 bls.	
Portland , 2,889	590 bdls.
Sundswall , 2,889	
Zinc Oxide Antwerp, 120 brls.	
Zinc Skimmings Philadelphia, 100 brls.	
Zinc White Rotterdam, 145 cks.	

MANCHESTER.

Week ending January 19th.

Acetic Acid Rotterdam, 3 cbys.	
Acetone Hamburg, 1 ck.	
Albumen Hamburg, 3 cks.	
Antimony Bi-Fluoride Hamburg, 2 cks.	
Barytes Rotterdam, 15 cks.	
Caustic Potash Treport, 42 dms.	
Chemicals (otherwise undescribed) Rotterdam, 5 cks.	
Colours Rotterdam, 8 cs.	41 cks. 16 brls. 22 bxs.
Dextrine Copenhagen, 50 bgs.	Felber, Jucker & Co.
Dyestuffs Alizarine Rotterdam, 5 cks.	
Farina Hamburg, 50 bgs.	
Copenhagen , 1,050	Felber, Jucker & Co.
Limestone Antwerp, 1 crt.	
Mineral White Bordeaux, 200 bgs.	J. & P. Hutchinson
Ochre Rotterdam, 50 bgs.	
Treport , 113 cks.	
Pitch Rotterdam, 5 brls.	
Potash Hamburg, 20 cks.	
Antwerp , 16 dms.	
Potassium Chloride Bordeaux, 24 cks.	J. & P. Hutchinson
Soap Bordeaux, 20 cs.	J. & P. Hutchinson

Sodium Acetate Treport, 33 cks.	
Starch Rotterdam, 80 cs.	
Antwerp , 156	
Tar Hamburg, 52 cks.	
Tartar Hamburg, 4 cks.	
Tin Perchloride Antwerp, 2 cks.	
Ultramarine Hamburg, 4 cs.	20 cks.
Wood Pulp Rotterdam, 2 pkgs.	
Drammen , 2,250 cs.	
Christiansand , 2,150	
Zinc Ashes Antwerp, 16 cks.	
Zinc Oxide Rotterdam, 50 brls.	
Hamburg , 1 ck.	
Zinc Sulphate Rotterdam, 5 brls.	

HULL.

Week ending January 19th.

Acid Antwerp, 10 pks.	Wilson, Sons, & Co., Ltd.
Alum Hamburg, 1 ck.	
Asbestos Genoa, 6 pkgs.	
Camphor Hamburg, 1 ck.	Wilson, Sons, & Co., Ltd.
Castor Oil Genoa, 41 cs.	Wilson, Sons, & Co., Ltd.
Leghorn , 10	
Chemicals (otherwise undescribed) Antwerp, 22 pkgs.	Wilson, Sons, & Co., Ltd.
Dunkirk , 24 dms.	
Hamburg , 5 cks.	Wilson, Sons, & Co., Ltd.
Genoa , 5	
Bremen , 3 pkgs.	Veltmann & Co.
"	12 cs. 1 crt. J. Pyefinch & Co.
Cod Oil Hamburg, 81 cks.	Wilson, Sons, & Co., Ltd.
Aalesund , 10 brls.	
Bergen , 20	
Colours Antwerp, 5 brls.	Wilson, Sons, & Co., Ltd.
Rotterdam , 18 cks.	75 pks. W. & C. L. Ringrose
"	9 7 brls. Hutchinson & Son
Dextrine Stettin, 275 bgs.	Wilson, Sons, & Co., Ltd.
Dyestuffs Alizarine Rotterdam, 62 pkgs.	Hutchinson & Son
"	38 14 cks. W. & C. L. Ringrose
Madder Rotterdam, 4 cks.	W. & C. L. Ringrose
Valonia Smyrna, 101 t.	
Farina Rotterdam, 500 bgs.	Wilson, Sons, & Co., Ltd.
Dunkirk , 20	
Stettin , 125	
Harlingen , 470	
Ghent , 84 bxs.	
Hamburg , 40 bgs.	
"	25
Glucose Stettin, 200 bgs.	
New York , 120 brls.	
Manure Dunkirk, 200 bgs.	Wilson, Sons, & Co., Ltd.
Naphthaline Hamburg, 1 ck.	

Ochre Marseilles, 41 cks.	
Rouen , 65	Wilson, Sons, & Co., Ltd.
Paint New York, 30 cs.	Wilson, Sons, & Co., Ltd.
Phosphate Antwerp, 50 t.	
Ghent , 81	500 bgs.
Phosphate Rock Coosaw, 2,650 t.	
Plumbago Genoa, 24 brls.	
Hamburg , 26 cks.	
Pumice Stone Leghorn, 20 pks.	8 cs. Wilson, Sons, & Co., Ltd.
"	5 cs.
Saltpetre Antwerp, 135 bgs.	Wilson, Sons, & Co., Ltd.
Hamburg , 4 brls.	
"	10 kgs.
Soap Naples, 86 cs.	
Starch Rotterdam, 40 cs.	Hutchinson & Son
Amsterdam , 10 bxs.	
Bremen , 1,103 cs.	Veltmann & Co.
Stearine Antwerp, 24 cks.	Wilson, Sons, & Co., Ltd.
Bordeaux , 50 bgs.	Wilson, Sons, & Co., Ltd.
Tallow Boston, 13 brls.	
Tartar Marseilles, 2 cks.	Wilson, Sons, & Co., Ltd.
Tartaric Acid Rotterdam, 9 cks.	W. & C. L. Ringrose
Turpentine Bordeaux, 5 cks.	Wilson, Sons, & Co., Ltd.
"	10 brls.
Treacle New York, 300 brls.	Wilson, Sons, & Co., Ltd.
Boston , 469	
Ultramarine Bremen, 4 cks.	Seymour & Co.
Varnish New York, 20 brls.	Wilson, Sons, & Co., Ltd.
Amsterdam , 4 cks.	W. & C. L. Ringrose
Hamburg , 1 cs.	G. J. Gley
"	4 cks. Todd & Son
Waste Salt Hamburg, 300 bgs.	Wilson, Sons, & Co., Ltd.
White Lead Rotterdam, 8 cks.	W. & C. L. Ringrose
Antwerp , 37	Bailey & Lenthall
Wood Pulp Helmstadt, 274 bls.	
Hango , 74	
"	175
Zinc White Rotterdam, 20 cks.	Hutchinson & Son

GLASGOW.

Week ending January 24th.

Acetic Acid Antwerp, 1 ck.	
Rouen , 8 cks.	
Albumen Hamburg, 13 cs.	
Aniline Rotterdam, 3 cs.	6 cks. J. Rankine & Son
Aniline Colours Hamburg, 1 ck.	
Barytes Rotterdam, 11 cks.	J. Rankine & Son
Barytes Sulphate Antwerp, 50 bgs.	
Bone Meal Bombay, 6,075 bgs.	
Carbonic Acid Rotterdam, 15 tu'	

Castor Oil —	
Marseilles, 241 brls.	
Chemicals (otherwise undescribed)	
Rotterdam, 1 cs. J. Rankine & Son	
Colours —	
Rotterdam, 8 cks. 50 pkgs.	
Hamburg, 3	
Dyestuffs —	
Alizarine	
Rotterdam, 23 cks. 1 cs. J. Rankine & Son	
48	
Argols	
Bordeaux, 49 cks	
Cutch	
Rangoon, 200 bxs. Cowri Bros. & Co.	
422	
Extracts	
Nantes, 100 cks.	
Antwerp, 4	
Madder	
Marseilles, 10 cks.	
Myrabolams	
Bombay, 1 334 bgs.	
Infusorial Earth —	
Hamburg, 41 bgs.	
Lead Acetate —	
Hamburg, 12 cks.	
Ochre —	
Marseilles, 7 cks.	
Oxalic Acid —	
Rotterdam, 6 cks.	
Paint —	
Philadelphia, 1 brl. 1 hf.-brl.	
Paraffin Scale —	
Philadelphia, 333 brls.	
Phosphates —	
Ghent, 204 bgs.	

Soap —	
Philadelphia, 400 bxs. 25 cts.	
Stearine —	
Amsterdam, 62 bgs.	
Sulphur Ore —	
Seville, 98 t. Seville Sulphur & Copper Co., Ltd.	
Tartar —	
Bordeaux, 5 cks.	
Tartaric Acid —	
Rotterdam, 2 cks.	
Treacle —	
New York, 500 brls.	
Philadelphia, 1,570	
Yarnish —	
Rouen, 14 cks.	
Waste Salt —	
Hamburg, 265 cks.	
Wood Pulp —	
New York, 909 rolls	
Philadelphia, 1,589	
Christiania, 2,476 bls.	
Zinc White —	
Rotterdam, 50 cks. J. Rankine & Son	

TYNE.

Week ending January 19th.

Carbonic Acid Gas —	
Rotterdam, 40 tubes Tyne S.S. Co.	
Chemicals (otherwise undescribed)	
Hamburg, 1 cs.	
Colours —	
Hamburg, 5 cs.	
Kieselguhr —	
Stavanger, 94 bgs.	

Phosphate —	
Bruges, 110 t. Langdale's Chem. Manure Co.	
Pyrites —	
Huelva, 1,566 t.	
Saltpetre —	
Hamburg, 3 cks. 20 kgs.	
Ultramarine —	
Hamburg, 3 cs.	
Wood Pulp —	
Christiania, 475 bls. 8 cs.	
Skien, 1,080	
Gotthenburg, 100 pkgs.	
Laurvig, 60	

GOOLE.

Week ending January 16th.

Alkali —	
Hamburg, 15 cks.	
Alum —	
Rotterdam, 2 cks.	
Barytes —	
Rotterdam, 5 cks.	
Antwerp, 100 bgs.	
Colours —	
Hamburg, 6 cks.	
Dyestuffs —	
Alizarine	
Rotterdam, 112 pkgs.	
Extracts	
Ghent, 50 cks.	
Rouen, 18	
Dyestuffs (otherwise undescribed)	
Rotterdam, 63 pkgs.	
Boulogne, 14 cks. 15 cs.	
Ghent, 11	
Farina —	
Hamburg, 700 bgs.	
Delfsryhl, 435	

Glucose —	
Dunkirk, 100 bgs.	
Potash —	
Rotterdam, 4 cks.	
Antwerp, 11 pkgs.	
Calais, 21 dms.	
Dunkirk, 6	
Potassium Chlorides —	
Hamburg, 100 bgs.	
Saltpetre —	
Hamburg, 66 cks. 20 kgs.	
Antwerp, 71 bgs.	
Stearine —	
Antwerp, 4 cks.	
Tartaric Acid —	
Rotterdam, 2 cks.	
Zinc Oxide —	
Antwerp, 20 cks.	

GRIMSBY.

Week ending January 19th.

Albumen —	
Hamburg, 5 cks.	
Aniline Dyes —	
Hamburg, 50 pkgs.	
Antwerp, 67	
Chemicals (otherwise undescribed)	
Rotterdam, 12 cks.	
Hamburg, 50 14 cs.	
Colours —	
Rotterdam, 2 cks.	
Antwerp, 34 pkgs.	
Hamburg, 6	
Dyestuffs (otherwise undescribed)	
Dieppe, 25 cks.	
Farina —	
Hamburg, 30 bgs.	
Zinc Ashes —	
Antwerp, 23 cks.	

EXPORTS OF CHEMICAL PRODUCTS

OF

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending January 23rd.

Ammonia —	
B. Ayres, 122 pkgs. £361	
Calcutta, 7 cs. 21	
Ammonium Carbonate —	
Dunkirk, 1 t. £32	
Brisbane, 1 ck. 10	
Cologne, 11 pkgs. 71	
Ammonium Chloride —	
Bagdad, 3 t. £110	
Bourgas, 18 c. 32	
Varna, 12 21	
Lisbon, 1 1 38	
Mersyne, 11 18	
Amsterdam, 7 12	
Ammonium Sulphate —	
Hamburg, 50 t. £600	
Canaria, 61 10 c. 716	
Barbadoes, 70 8 770	
Samarang, 50 550	
Ostend, 25 275	
Ghent, 30 330	
Boracic Acid —	
Brisbane, 10 c. £17	
Sydney, 18 30	
Borax —	
Brisbane, 10 c. £11	
Calcium Chloride —	
Wellington, 3 t. 5 c. £16	
Carbonic Acid Gas —	
Jersey, 20 tubes £8	
Caustic Soda —	
Delagoa Bay, 7 c. £9	
Melbourne, 10 t. 10 97	
Algoa Bay, 9 17	
Sydney, 20 192	
Chemicals (otherwise undes.)—	
Natal, 6 c. £10	
New York, 16 cks. 240	
Calcutta, 5 pkgs. 13	
Brisbane, 2 kgs. 4 cs. 31	
Melbourne, 3 24	
Bombay, 23 106	
Adelaide, 5 cks. 27 48 263	
50 drs. 50 108	
B. Ayres, 2 dms. 20 55	

Madras, 1 t. 1 c. 45	
Wellington, 16 41	
Citric Acid —	
Calcutta, 2 cs. 14	
Durban, 1 c. 8	
Passages, 10 61	
New York, 1 6	
Reval, 4 cks. 128	
Genoa, 5 40	
B. Ayres, 13 86	
Sydney, 1 t. 110	
Brussels, 5 33	
Coal Products —	
Aniline Dyes	
Brisbane, 2 cs. £15	
Adelaide, 1 9	
Melbourne, 3 35	
Aniline Oil	
New York, 10 dms. £270	
Anthracene	
Rotterdam, 30 cks. £170	
Cologne, 241 1,421	
Dusseldorf, 51 380	
Benzol	
Rotterdam, 17 dms. £148	
Antwerp, 36 cks. 100	
Carbolic Acid	
Sydney, 6 cs. 5 cks. £35	
Rotterdam, 49 200	
Hiogo, 50 115	
Treport, 22 127	
Antwerp, 20 pkgs. 29	
Pt. Elizabeth, 10 drs. 15	
Coal Tar Dyes	
Lyttelton, 21 pkgs. £176	
Boston, 5 cs. 11	
Naphtha	
Calais, 49 cks. £125	
Naphthalene	
Hamburg, 40 cks. £95	
Pitch	
Rio de Janeiro, 30 runs. £15	
Melbourne, 4 brls. 83	
Alexandria, 200 83	
Philadelphia, 1,000 bgs. 171	
Adelaide, 50 pkgs. 20	
Boston, 850 brls. 594	
Sydney, 4 cks. 15	
Genoa, 1,934 3,500	
Pt. Elizabeth, 6 5	
Newport News, 500 bgs. 100	

Tar	
Natal, 600 dms. £48	
Boston, 260 brls. 135	
Calicut, 35 21	
Boston, 400 210	
Pt. Elizabeth, 4 cks. 5	
Coal Products (otherwise undes.)—	
Sydney, 200 drs. £39	
Copper Sulphate —	
Treport, 5 t. £85	
Mangalore, 1 3 c. 17	
Genoa, 27 5 400	
Leghorn, 10 18 160	
Florence, 27 12 400	
Cream of Tartar —	
Melbourne, 10 c. £35	
Rockhampton, 20 kgs. 109	
Adelaide, 5 19	
Launceston, 1 10 101	
Sydney, 5 3 350	
Disinfectants —	
Melbourne, 4 cs. £21	
Bombay, 8 5 kgs. 58	
Brisbane, 7 10 dms. 50	
Shanghai, 6 21	
Auckland, 3 20 24	
Dried Blood —	
Canaria, 6 t. £47	
Guano —	
Barbadoes, 4 3 t. 7 c. £4,750	
Manure —	
Jersey, 250 t. £2,054	
Nitric Acid —	
Jersey, 20 cbys. £40	
Oxalic Acid —	
Lisbon, 7 c. £12	
Phosphoric Acid —	
Philadelphia, 2 t. 5 c. £131	
Phosphorus —	
Sydney, 22 cs. £220	
Lisbon, 2 23	
Adelaide, 2 20	
Potash —	
M. Video, 10 dms. £33	
Tangier, 11 c. 13	
Potash Crystals —	
Toronto, 3 cs. £21	
Natal, 5 c. 49	

Potassium Bicarbonate —	
Philadelphia, 2 t. 4 c. £56	
Potassium Chlorate —	
New York, 5 t. 8 c. £240	
Gotthenburg, 5 kgs. 14	
Ottawa, 10 25	
Melbourne, 6 cs. 12	
Potassium Prussiate —	
Huelva, 2 c. £11	
Leghorn, 2 cks. 40	
Potassium Sulphate —	
Melbourne, 1 t. £31	
Saltpetre —	
Wellington, 1 t. £23	
Rio de Janeiro, 37 1 c. 868	
Pernambuco, 6 3 147	
Madeira, 6 9	
Santiago, 2 5 53	
Santos, 16 20	
Bahia, 3 3 76	
Piræus, 1 5 28	
Sheep Dip —	
Pt. Stanley, 15 cs. £30	
B. Ayres, 305 310	
Sydney, 8 t. 4 c. 237	
Melbourne, 2 13 94	
Soda Crystals —	
Bremen, 12 t. £60	
Sodium —	
Ghent, 2 t. £250	
New York, 3 1 c. 446	
Sodium Bicarbonate —	
Natal, 10 c. £5	
Karachi, 1 1	
Rockhampton, 1 t. 7	
Calcutta, 4 cs. 15	
Mossel Bay, 1 5	
Sodium Sulphate —	
Ghent, 110 t. £110	
Sulphur —	
Sydney, 1 t. £8	
Superphosphate —	
Canaria, 39 t. 6 c. £168	
Bordeaux, 27 81	
Tartaric Acid —	
Melbourne, 1 t. £93	
Karachi, 1 c. 6	
Alexandria, 2 11	

LIVERPOOL.

Week ending January 23rd.

Alum—				
Alexandria, 4 L. 5 C.	6.80			
Portland, O., 17 1/2	11.3			
Canton, 17 1/2	7			
Alumina Sulphate—				
Portland, M., 11 L. 4 C. 1/2	6.64			
Calcutta, 30 1/2	15.4			
Aluminium—				
Gijon, 10 C.				
Ammonia—				
Columbus, 20 L. 2 C.	6.13			
Ammonium Carbonate—				
Genoa, 1 L.	6.37			
Lisbon, 15 C.				
Bombay, 1 1/2	4.4			
Ammonium Chloride—				
Genoa, 10 C.	6.16			
Paris, 10 L. 1 C.	16			
Lisbon, 30 L. 10 C.	3.8			
San Francisco, 10	1.3			
Ammonium Sulphate—				
Genoa, 20 L. 4 C.	6.102			
Baltimore, 31 1/2	1			
Portland, M., 5	55			
Valencia, 20 1/2	12			
Malaga, 20 1/2	6			
Barcelona, 20 1/2	5			
Philadelphia, 20 1/2	5			
New York, 20 1/2	12			
Bombay, 24 1/2	4			
Las Palmas, 20 1/2	3			
St. John's, N. F., 20 1/2	11			
Arsenic—				
B. Ayres, 10 C.	6.7			
Asbestos—				
Valencia, 10 C.				
Barytes—				
Bombay, 30 kgs.				
Bleaching Powder—				
Baltimore, 100 cks.				
Bombay, 100				
Calcutta, 100				
Dunkirk, 100				
Ghent, 100				
Newport News, 100				
New York, 100				
Antwerp, 100				
Bombay, 100				
Cape Town, 100				
Havana, 100				
Laguna, 100				
Manila, 100				
Operta, 100				
Philadelphia, 100				
Roson, 100				
Union, 100				
Bone Ash—				
Nantes, 40 L. 10 C.	6.114			
Boric Acid—				
New York, 4 L.	6.103			
Bombay, 4	109			
Tampico, 4	5 C. 2 C.			
Borax—				
Bombay, 10 L. 2 C.	6.100			
N. York, 10 cks. 10	8			
St. John, 10	1,001			
St. Louis, 10	10			
St. Paul, 10	10			
St. Petersburg, 10	10			
St. Petersburg, 10	10			
Calcium Chloride—				
Columbus, 4 L. 2 C.	6.10			
Carbolic Acid—				
Marcellus, 10 L. 7 C.	6.17			
New York, 10 L. 4	10.4			
Genoa, 10	10			
Rio de Janeiro, 10	10			
Rotterdam, 10	10			
Roson, 10	10			
Caster Oil—				
Acra, 3 C.				
Operta, 3 C.				
Caustic Potash—				
Newport News, 7 L. 1 C.	6.101			
Caustic Soda—				
Alcaline, 30 dms.				
Bombay, 30				
Bombay, 30				
Dumfries, 30				
East St. Louis, 30				
Genoa, 30				
Havana, 30				
Hong Kong, 30				
La Guayra, 30				
Laguna, 30				
Lisbon, 30				
Malaga, 30				
Nagasaki, 30				

Newport News, 1,000				
New York, 107	50			
Philadelphia, 107				
San Francisco, 100				
Seville, 132 cks.	100			
Valparaiso, 68				
Alicante, 9				
Antwerp, 30				
Araiaja, 10 cks.				
B. Ayres, 12				
Cartagena, Sp., 40				
Conseguos, 44				
Corfa, 30				
Corinto, 6				
Fiume, 3				
Halifax, 15				
Hamburg, 90				
Higo, 100				
Malaga, 6				
Manila, 150				
M. Video, 100				
Naples, 67				
Pernambuco, 30				
Rio de Janeiro, 100				
San Francisco, 100				
Tarragona, 20				
Vera Cruz, 30				
Chemicals (otherwise undescribed)				
Mervyn, 4 C.	6.7			
Samsom, 4	7			
Genoa, 4 L. 10	160			
Bombay, 4 L. 10	160			
Philadelphia, 10 L. 18	475			
Odesa, 3	104			
Genoa, 3	10			
Bahia, 15 cks.	60			
China Clay—				
Bombay, 30 L.				
Bombay, 600				
New York, 100 cks.				
Rio de Janeiro, 24				
Chloroform—				
Portland, 1 C.				
Coal Products—				
Aniline Oil				
Genoa, 5 dms.				
Aniline Salts				
Bombay, 2 cks.				
New York, 14				
St. Nazaire, 20				
Cresote Oil				
Bombay, 100 cks. 20 dms.				
Pitch				
Antwerp, 905 L.				
Bombay, 400 brls.				
Roson, 4 cks.				
St. Louis, 4 cks.				
Tar				
Baltimore, 20 brls.				
Cod Oil—				
Bombay, 3 brls.				
Cobalt Oxide—				
Antwerp, 3 C.	6.76			
Copperas—				
Roson, 4 L. 10 C. 1 C.	6.10			
Callan, 6 3/4	10			
Alexandria, 5	10			
Copper Sulphate—				
St. John's, Nfld., 1 L. 1 C. 1 C.	6.15			
Laguna, 5	3			
Saguna, 5	3			
Bombay, 80	1,001			
Callan, 1 1/2	10			
Venice, 15 1/2	1			
Operta, 60	4			
Lisbon, 10	2			
Bombay, 10	10			
Roson, 10	10			
Nantes, 10	10			
Valparaiso, 10	10			
Marcellus, 10	10			
Talcahuano, 4	10			
Vigo, 5	10			
Disinfectants—				
Rio de Janeiro, 1 C.	6.10			
Hamburg, 1 C.	6.10			
Pernambuco, 1	5			
Dried Blood—				
Las Palmas, 10 L.	6.101			
Guano—				
Valencia, 100 L.	6.101			
Malaga, 100	6.101			
Gypsum—				
Portland, M., 4 L. 10 C.	6.10			
New York, 35	8			
Iron Oxide—				
Gijon, 1 L. 13 C. 1 C.	6.10			
Lime—				
Liquitos, 3 L. 10 C.	6.10			
Litharge—				
Sydney, 20 kgs.				
Magnesia—				
Laguna, 10 Cks. 10 Cks.				

Bilbao, 50				
Havre, 51				
Magnesium Sulphate—				
Pernambuco, 100 brls.	5 C.			
Manganese Ore—				
Antwerp, 2 C.				
Hamburg, 4 L. 17				
Manure—				
Marseilles, 73 L. 18 C. 1 C.	6.108			
Bordeaux, 400	4			
Genoa, 484	15			
Oxalic Acid—				
Lisbon, 13 C. 2 C.	6.103			
Barcelona, 12 L. 12	37.5			
Paint—				
Beyroot, 10 kgs.				
Calcutta, 4 cks.				
Cartagena, N.G., 50				
Curacao, 3	41 pks.			
Hamburg, 12				
Las Palmas, 156				
Lisbon, 250	6			
Malta, 1	9 dms.			
Marseilles, 8				
Matanzas, 1				
New York, 5 C.	4			
Rangoon, 9	2			
Santiago de Cuba, 1				
Sierra Leone, 30	12			
Valparaiso, 70	8 C.			
Barranquilla, 10				
Callao, 10				
Cardenas, 3				
E. London, 1				
Gd. Bassa, 40				
Hobart Town, 156	1			
Manila, 12	4			
Para, 3	20			
Pernambuco, 2	1			
Sagua la Grande, 2				
Painters' Colours—				
Baltimore, 500 cks.				
Bilbao, 1,055 kgs.	97 brls.			
Bombay, 1,055 kgs.				
Calcutta, 1 C.				
Cardenas, 2	1 C.			
Hong Kong, 15	15 C.			
Lisbon, 1 L.	1			
M. Video, 10 dms.	5			
New York, 100	20			
Para, 143	30			
Pelotas, 44	7			
Portland, 7				
Puerto Cabello, 3	11 C.			
Sagua la Grande, 100				
Valparaiso, 100				
Bordeaux, 1 L.				
Boston, 10				
B. Ayres, 20	73			
New York, 15	5 C.			
O. Calabaz, 1	15			
Pernambuco, 30	2 dms.			
Philadelphia, 15				
Puerto Alegre, 15	16 C.			
Rio de Janeiro, 70				
Trehanade, 2				
Trinidad, 2				
Phosphate of Lime—				
New York, 1 L. 1 C.	6.10			
Potassium Bichromate—				
San Sebastian, 1 L. 2 C. 1 C.	6.103			
St. Nazaire, 2 C. 3	5			
Potassium Carbonate—				
Newport News, 10 C.	6.10			
Potassium Chlorate—				
Sydney, 10 C.	6.10			
Corum, 10	10			
Cape Town, 1 L.	10			
Pt. Elizabeth, 1	10			
Gothenburg, 7	10			
Manila, 4	10			
Laguna, 15	10			
Genoa, 10	10			
Bari, 10	10			
Cañania, 10	10			
Bombay, 13	10			
Higo, 43	10			
Shanghai, 2	10			
Batavia, 6	10			
New York, 2	10			
Roson, 1	10			
Rotterdam, 2	10			
Potassium Prussiate—				
Alexandria, 1 C.	6.10			
Potassium Stannate—				
Bombay, 1 L. 5 C. 1 C.	6.103			
Rosin—				
Rio de Janeiro, 3 cks.				
Salt—				
Acra, 3 L.				
Antwerp, 205				
Bombay, 10				

Boston,	100	
B. Ayres,	11	
Calcutta,	3,535	
Christiania,	10	
Copenhagen,	450	
Faroe Islands,	178	
Ghent,	100	
Gd. Bassam,	25	
Lagos,	40	
Lytelton,	20	
Melbourne,	175	
Pensacola,	500	
Rotterdam,	234	
Wellington,	90	
Adelaide,	17	
Portland, Me.,	369	5 c.
Rouen,	20	
Sydney,	200	
Wellington,	125	
Salt Cake—		
Newport News,	99 t.	
Leghorn,	100	
Wellington, N.Z.,	3	10 c.
Antwerp,	50	2
Baltimore,	221	1
Saltpetre—		
Pernambuco,	5 t.	14 c.
Sheep Dip—		
M. Video,	3 t.	12 c.
Calcutta,	1	13
B. Ayres, 15 cks.	30	7
Slag—		
Madeira,	4 t.	
Soap—		
Adjuah,	100 bxs.	
Alexandria,	21	
Algoa Bay,	1,125	30 cks.
Appam,	100	
Bathurst,	104	
Belize,	550	
Bombay,	650	5
Boston,		
Cape Town,	2,158	
Chama,	21	
Conakry,	40	
Curacao,	105	
Durban,	500	
E. London,	2,670	
Genoa,	70	
Gibraltar,	225	
Guayaquil,	900	
Johannesburg,	340	
Kington, Jam.,	1	
New York,	450	66
Para,	300	2
Pt. Elizabeth,	1,530	25
Quilba,	25	
Rangoon,		17
Rio de Janeiro,		3
St. Lucia,	80	
Winnibal,	250	
Arica,		600
Calcutta,		10
Colon,	31	
Las Palmas,	335	
Malta,	24	
Manao,	500	
Mauritius,	1,004	
M. Video,		2
Portland,		1
Pt. Natal,	2,380	20
Pt. Said,	30	
Rotterdam,	20	190
Sierra Leone,		1
Tampico,		1
Vera Cruz,		1
Soda Alkali—		
Barcelona,	50 bks.	
Calcutta,		32 cks.
Melbourne,		41
Seville,	100	
Soda Ash—		
Baltimore,	2,775 bgs.	30 cks.
Barcelona,		93
Boston,	1,000	254
B. Ayres,		
Calcutta,		34
Gothenburg,	50	
Hingo,		79
Kobe,		
Lisbon,		54
Marxham,		
Newport News,	900	
New York,	6,820	94
Philadelphia,	2,418	67
Antwerp,	750	20
Carri,		
Copenhagen,		12
Cocfa,		
Genoa,	200	
Ghent,	50	
Rio de Janeiro,		
Sayreya,		
Syva,		
Venice,	80	

34 brls.
50 100 cks.
392 740
34 280 300 kgs.
12 70
15
late—
2 cks.
ate—
125 cs.
100
1 ck.
bonate—
4 cks.
6 400 kgs.
36
55 3 brls.
20 20
200
149 14 70
40 8
8 20
425 50
70 10 bgs.
4 40 10
onate—
112 brls.
rate—
120 kgs.
60
osulphite—
20 kgs.
20
25
phate—
5 cks.
sate—
20 cks.
ate—
8 brls.
G., 10
17
Lime—
10 c. £1
1 t. 10 c. £9
150 6 469
40 1 145
6 2
10 1 38
10 10 55
ate—
5 t. 10 c. £13
2,017 3,363
29 101
84 brls 90 hf.-pns.
195 57 cks.
800 25
50 10 tcs.
50 cs.
10 26
25
5 brls.
5
30 dms.
2 cs.
2 t. 17 c
4
20 brls.
200

CHESTER.

ding January 24th.

lours—
2 cks.
1 dm.
4
27
ia—
20 dms.

Colours—
Rio de Janeiro, 13 cks.

Farina—
Hamburg, 1 ck.

Indigo—
Rouen, 4 cs.

Paraffin Wax—
Barcelona, 60 bgs.
Hamburg, 30 cs.

Potassium Bichromate—
Rio de Janeiro, 1 ck.

Sulphuric Acid—
Rio de Janeiro, 38 cs

Tar Salts—
Antwerp, 60 cks.

Toluol—
Rotterdam 50 brls.

HULL.

Week ending January 19th.

Ammonium Sulphate—
Ghent, 514 bgs.
Hamburg, 500

Benzol—
Rotterdam, 22 cks.

Bleaching Powder—
Boston, 53 cks
Fiume, 83
Leghorn, 61

Borax—
Riga, 5 cks.

Caustic Soda—
Danzig, 87 dms.
Hango, 35
Leghorn, 5
Libau, 32
Riga, 270

Chemicals (otherwise undescribed)
Danzig, 95 pks.
Christiania, 4 cs.
Gothenburg, 10 pkgs 35 5 cks.
Genoa, 10 14
Haringen, 20
Hamburg, 31 7
Leghorn, 5
Libau, 105 pks. 35
Marseilles, 10
Naples, 3
Reval, 151
Rouen, 59 pkgs.
Riga, 77
Stettin, 20
Trieste, 8
Bordeaux, 20

Cottonseed Oil—
Bremen, 432 c.
Danzig, 156
Hamburg, 809
Leghorn, 202
Rotterdam, 1,602
Trieste, 300
Antwerp, 400

Dyestuffs (otherwise undescribed)
Boston, 8 cks.
Christiania, 100 bgs.
Königsberg, 1 cs.
Libau, 7 pks.
Reval, 1 2
Rotterdam, 4
Stettin, 162
Amsterdam, 1

Linseed Oil—
Copenhagen, 17 c.
Christiania, 176
Drontheim, 42
Rotterdam, 183
Stavanger, 74
Bergen, 59

Manure—
Flensburg, 593 t.

Mineral White—
Ghent, 1 ck
Haringen, 5 t. 200 bgs.

Naphtha—
Copenhagen, 3 dms.

Painters' Colours—
Danzig, 5 cks.
Christiania, 8 2 dms.
Fiume, 2 cs.
Ghent, 6
Genoa, 6
Naples, 8
Rouen, 40
Riga, 10
Rotterdam, 2 4
Amsterdam, 1
Antwerp, 30
Bordeaux, 1

Phosphorus—
Rotterdam, 40 cs

Pitch—
Hango, 4 cks.
Antwerp, 358 t.

Soap—
Gothenburg, 2 cs.

Tallow—
Bremen, 3 cks.
Gothenburg, 6

Tar—
Danzig, 5 cks.
Hamburg, 12
Marseilles, 200
Rotterdam, 2
Stettin, 1 cs.
Antwerp, 24

Treacle—
Drontheim, 5 cks.
Bergen, 15

Yarnish—
Copenhagen, 2 cans
Ghent, 1 cs.
Rotterdam, 3 cks.
Bordeaux, 5

GLASGOW.

Week ending January 24th.

Ammonium Sulphate—
Rouen, 50 t.
Valencia, 232 19 c
Hamburg, 30 8
Demerara, 76 4
Philadelphia, 25 9½
U.S.A., 50 16½
Genoa, 50 16½

Asbestos—
Yokohama, 4½ c.
Rangoon, 831 lbs.

Bleaching Powder—
Sydney, 6 t. 3¼ c.

Caustic Soda—
U.S.A., 6 t. 7 c.

Chloride of Lime—
U.S.A., 5 t. 14 c.

Coal Products—
Naphtha
Rouen, 7 t. 17 c.
Pitch
Calcutta, 100 brls.
Amsterdam, 200 t.
U.S.A., 48 1½ c.
Danzig, 53 12
Tar
Rangoon, 50 brls.
Danzig, 200
Tar Oil
Danzig, 50 brls.

Coal Products (otherwise undes.)—
Rotterdam, 17 t.

Dyestuffs—
Extracts
Barcelona, 1 t. 6½ c.
Logwood
Lisbon, 2 t. 15¾ c.
Bowenfels, NSW., 3 4½

Linseed Oil—
Sydney, 4 t. 4¼ c.

Magnesium Sulphate—
Sydney, 5 t. 11¼ c.

Paint—
Sydney, 654

Painters' Colours—
Calcutta, 635
Singapore, 107
Rangoon, 1 t. 7 c.

Paraffin Wax—
Barcelona, 3 t. 9 c.
Amsterdam, 11

Potassium Bichromate—
Rouen, 5 t. 8 c.
U.S.A., 18 11¼

Potassium Prussiate—
U.S.A., 9 t. 1¼ c.

Soap—
Lisbon, 3 t. 8 c.
Trinidad, 6 18½

Sulphuric Acid—
Rangoon, 6299

Tin Oxymuriate—
Lisbon, 629

White Lead—
Sydney, 19 t.

TYNE.

Week ending January 19th.

Alkali—
Antwerp, 7 t. 3 c.
Aalborg, 30

Ammonium Chloride—
Barcelona, 3 t. 2 c.

Ammonium Sulphate—
Valencia, 31 t.

Antimony—
Hamburg, 1 t.

Arsenic—
Horsens, 1 t. 5 c.

Barium—
Rouen, 11 t. 13 c.

Bleaching Powder—
Gothenburg, 5 t. 2 c.
Antwerp, 4 18
Christiania, 10 1
Rotterdam, 28 11
Rouen, 10 1
Drontheim, 10 1
Lisbon, 4 19

Castor Oil—
Bergen, 5 c.

Caustic Soda—
Hamburg, 1 t. 3 c.
Antwerp, 3 15
Gothenburg, 2 18
Piraeus, 12
Lisbon, 5 5

Colours—
Rotterdam, 12 c.

Litharge—
Hamburg, 1 t. 7 c.

Magnesia—
Hamburg, 4 c.
Antwerp, 1
Rouen, 1 t. 3
Barcelona, 2

Manure—
Jersey, 175 t.
Valencia, 50

Paint—
Hamburg, 9 c.

Soda—
Christiania, 5 t.
Rotterdam, 19 17 c.
Aalborg, 12 1
Jersey, 13 19

Soda Ash—
Lisbon, 5 t. 4 c.
Bergen, 5 9

Sulphur—
Rotterdam, 10 t.
Sannesund, 400
Antwerp, 5

White Lead—
Hamburg, 4 c.

GOOLE.

Week ending January 16th.

Chemicals (otherwise undescribed)
Ghent, 10 cks.
Rotterdam, 146
Rouen, 1

Coal Products (otherwise undes.)—
Boulogne, 3 cs.
Ghent, 1 4 cks. 10 dms.
Rotterdam, 1 25

Manure—
Dunkirk, 372 bgs.
Bruges, 457
Ostend, 190
Boulogne, 29
Ghent, 480
Hamburg, 489

Painters' Colours—
Ghent, 2 cks. 1 cs.
Rotterdam, 2 2

Pitch—
Antwerp, 590 t.
Dunkirk, 100

GRIMSBY.

Week ending January 19th.

Chemicals (otherwise undescribed)
Antwerp, 7 cks.
Hamburg, 20 20 cs. 11 pkgs.

Coal Products (otherwise undes.)—
Dieppe, 85 cks. 2 cs.
Gothenburg, 1

PRICES CURRENT.

WEDNESDAY, JAN. 30th, 1895.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

Acids:—		£	s.	d.
Acetic, 25 % and 40 %	per cwt.	7/-	10/6	
Glacial			50/-	
Arsenic S.G., 2000°		0	15	0
Fluoric	per lb.	0	0	3 1/4
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0	10
(Cylinder), 30° Tw.		0	3	0
Nitric 80° Tw.	per lb.	0	0	1 1/4
Nitrous		0	0	1 1/4
Oxalic	nett	0	0	3 1/4
Phosphoric, 1750°		0	0	11
Picric		0	0	10
Sulphuric (fuming 50 %)	per ton	15	10	0
(monohydrate)		5	10	0
(Pyrites, 168°)		3	0	0
(free from arsenic, 145°)		1	5	0
Sulphurous (solution) S.G. 1025		1	6	0
Tannic (pure)	per lb.	0	1	0
Tartaric		0	0	11
Arsenic, white powdered	nett per ton	14	10	0
Alum (loose lump)		4	17	6
Alumina Sulphate (pure)		4	17	6
Aluminoferric		2	7	6
Aluminium	per lb.	0	3	0
Ammonia, Anhydrous		0	1	4
" 880=28° B.	per lb.	0	0	3
" =24° B.		0	0	2 1/4
Carbonate	nett	0	0	3 1/4
Muriate	per ton	23	10	0
(sal-ammoniac) 1st & 2nd	per cwt.	39/-	37/-	
Nitrate	per ton	41	0	0
Phosphate	per lb.	0	0	10 1/2
Sulphate (grey) London	per ton	11	8	9
(grey) Hull		11	8	9
Aniline Oil (pure)	per lb.	0	0	5 1/4
Aniline Salt		0	0	4 1/4
Antimony	per ton	32	10	0
(tartar emetic)	per lb.	0	0	9 1/2
(golden sulphide)		0	0	10
Barium Chloride	per ton	6	10	0
Carbonate (native)		3	5	0
Sulphate (native levigated)		45/-	75/-	
Bleaching Powder, 35 %	nett	7	5	0
Liquor, 7 %		3	10	0
Bisulphide of Carbon		11	5	0
Chromium Acetate (crystal)	per lb.	0	0	6
Calcium Chloride	per ton	2	2	6
China Clay (at Runcorn) in bulk		17/6	to 30/-	
Coal Tar Products and Dyes:—				
Alizarine (artificial) 20 %	net per lb.	0	0	8
Magenta		0	3	9
Anthracene, 30 % A, f.o.b. London	per unit per cwt.	0	1	1
Benzol, 90 % nominal	per gallon	0	1	0
50/90		0	1	0 1/2
Carbolic Acid (crystallised 40°)	per lb.	0	0	5 1/4
(crude 60°)	per gallon	0	1	9
Creosote (ordinary)		0	0	2
(filtered for Lucigen light)		0	0	2
Crude Naphtha 30 % @ 120° C.		0	0	5
Grease Oils, 22° Tw.	per ton	2	10	0
Pitch, f.o.b. Liverpool or Garston		1	13	0
Solvent Naphtha, 90 % at 160°	per gallon	0	1	2
Lucigen and Wells Oils		0	0	2 1/2
Copper	per ton	40	7	6
Sulphate		15	10	0
Oxide (copper scales)		39	0	0
Glycerine (crude)		15	0	0
(distilled S.G. 1250°)		40	0	0
Iodine	nett, per oz.	0	0	9
Iron Sulphate (copperas)	per ton	1	5	0
Sulphide (antimony slag)		2	0	0
Lead (sheet) for cash		10	12	6
Litharge Flake (ex ship)		13	10	0
Acetate (white)		24	15	0
brown		15	10	0
Carbonate (white lead) pure		16	0	0
Nitrate		19	0	0
Lime, Acetate (brown)	per ton	5	15	0
(grey)		9	15	0
Magnesium (ribbon and wire)	per oz.	0	2	3
Chloride (ex ship)	per ton	2	10	0
Carbonate	per cwt.	1	17	6
Hydrate	per ton	17	0	0
Sulphate (Epsom Salts)	per ton	3	0	0
Manganese, Sulphate		17	15	0
Borate	per cwt.	2	15	0
Ore, 70 %	per ton	4	5	0
Methylated Spirit, 61° O.P.	per gallon	0	1	10
Naphtha (Wood), Solvent		0	3	0
Miscible, 60° O.P.		0	3	1
Oils:—				
Cotton-seed	per on	18	10	0
Linseed		22	0	0
Petroleum, American	per gallon	0	0	5 1/4
Stearine	per ton	26	0	0
Phosphorus (yellow)	per lb.	0	2	2
(red)		0	2	8
Potassium (metal)	per oz.	0	3	7
Bichromate	per lb.	0	0	4 1/4
Carbonate, 90% (ex ship)	per ton	16	15	0
Chlorate	per lb.	0	0	5 1/4
Cyanide, 98%		0	1	11
Hydrate (Caustic Potash) 80/85 %	per ton	21	10	0
(Caustic Potash) 75/80 %		20	0	0
(Caustic Potash) 70/75 %		19	10	0
Nitrate (refined)	per cwt.	1	2	6
Permanganate	per cwt.	3	0	0
Prussiate Yellow	per lb.	0	0	10
Sulphate, 90 % (ex ship)	per ton	9	15	0
Muriate, 80 % (do.)		8	7	6
Silver (metal)	per oz.	0	2	3 1/2
Nitrate		0	2	10
Sodium (metal)	per lb.	0	3	0
Carb. (refined Soda-ash) 48 %	nett per ton	4	15	0
(Caustic Soda-ash) 48 %		4	0	0
(Carb. Soda-ash) 48 %		4	0	0
(Alkali) 58 %		4	0	0
(Soda Crystals)		2	5	0
Acetate (ex-ship)		14	5	0
Arseniate, 45 %		11	0	0
Chlorate	per lb.	0	0	7 1/4
Borate (Borax)	net, per ton	20	0	0
Bichromate	per lb.	0	0	3 1/4
Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton		10	0	0
(74 % Caustic Soda)		8	17	6
(70 % Caustic Soda)		7	17	6
(60 % Caustic Soda)		6	17	6
(60 % Caustic Soda, cream) (f.o.b.)		6	17	6
Bicarbonate		5	12	6
Hypsulphite		5	10	0
Manganate, 30%		15	0	0
Nitrate (95 %) ex-ship Liverpool	per cwt.	0	8	9
Nitrite, 98 %	per ton	29	0	0
Phosphate		15	0	0
Silicate (glass)	per ton	5	2	6
(liquid, 100° Tw.)		4	5	0
Stannate, 40 %	per cwt.	3	2	9
Sulphate (Salt-cake)	per ton	0	17	6
(Glauber's Salts)		1	5	0
Sulphide		8	10	0
Sulphite		5	7	6
Strontium Hydrate, 100%		8	10	0
Sulphocyanide Ammonium, 95 %	per lb.	0	0	7
Barium, 95 %		0	0	5
Potassium		0	0	7 1/4
Sulphur (Flowers)	per ton	7	5	0
(Roll Brimstone)		5	5	0
Brimstone: Best Quality		3	15	0
Superphosphate of Lime (26%)		2	7	6
Tallow		24	18	0
Tin Crystals	per lb.	0	0	6
English Ingots	per ton	64	10	0
Zinc (Spelter)		14	2	6
Chloride (solution, 100° Tw.)		5	7	6

THE CHEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

No. 403.

SATURDAY, FEBRUARY 9, 1895.

Vol. XVI.

Contents.

PAGE	PAGE
Topics	97
tion under the Alkali Act ..	98
Intelligence	99
Salt to Remove Snow	99
ersey and Irwell Joint Com- ..	100
al Section of the Manchester ..	101
ber of Commerce	101
al Instruction in Lancashire ..	101
s of Alkali and Bleach	102
s of Companies	102
inciples of Lead and Copper ..	102
ing	102
chemical Industry of Italy	103
Notes	103
Tar and Ammonia Products	104
Report on Manure Material	104
The Metal Market	104
Miscellaneous Chemical Market ..	104
Liverpool Oil and Colour Market ..	105
Tyre Chemical Report	105
West of Scotland Chemicals	105
The Copper Market	105
Hull Paint, Oil, and Colour Report ..	105
New Companies	106
The Patent List	106
Gazette Notices	106
Imports	106
Exports	108
Prices Current	112

ADVERTISEMENT.

SITUATION WANTED.—Practical Chemical, Mechanical, general Technical, and Managerial experience; reorganisation, upkeep. Business capacity, tact, energy, quick grasp of new subjects; honest.—"Z," 18, Noel-street, Islington, London, N.

Notices.

communications for the *Chemical Trade Journal* should be sent, and Cheques and Post Office Orders made payable to—

DAYIS BROS., 32, Blackfriars Street, MANCHESTER.

Our Registered Telegraphic Address is—

"Expert, Manchester."

Terms of Subscription, commencing at any date, to the *Chemical Trade Journal*,—payable in advance,—including postage part of the world, are as follows:—

Yearly (52 numbers) 12s. 6d.
Half-Yearly (26 numbers) 6s. 6d.
Quarterly (13 numbers) 3s. 6d.

communications for the Editor, if intended for insertion in the next week's issue, should reach the office not later than **Tuesday evening**.

Articles, reports, and correspondence on all matters of interest to the chemical and allied industries, home and foreign, are solicited. Respondents should condense their matter as much as possible, on one side only of the paper, and in all cases give their names and addresses, not necessarily for publication. Sketches should be on separate sheets.

Advertisements.

paid Advertisements of Situations Vacant, Premises on Sale or To be Let, and various Wants, and Specific Articles for Sale by Private Contract are taken in the *Chemical Trade Journal* at the following rates:—

30 Words and under 2s. 6d. per insertion
Each additional 10 words 6s. 6d.

Advertisements, Announcements in the Directory Columns, and all Advertisements not prepaid, are charged at the Tariff rates, which will be forwarded on application.

Advertisements intended for insertion in the current week's issue should reach the office by **Wednesday morning** at the latest.

CURRENT TOPICS.

SUGAR BEET CULTIVATION.

WE have before us the returns for the sixth consecutive year of sugar beet cultivation in England and Ireland. They are as satisfactory as last year, and prove more conclusively than ever the possibility of growing sugar beet successfully in this country.

The trials have been made upon a tolerably wide basis, 29 experiments on nine different kinds of seeds having been made during the past year.

The average weight of the crops per acre has been 14 tons, while the quantity of sugar in 100 parts of juice has varied from 15.9 parts to 10.35. The average saccharine contents of the roots from the nine different seeds is 14.15, a very satisfactory figure as compared with roots grown on the Continent. There is, however, great variance between the weight of roots per acre from the twenty-nine crops which have been grown. This fact is one which naturally arrests attention, but a close investigation of the returns shows that there is in most cases a reasonable explanation of the apparent poorness of some crops.

Generally speaking, a dry soil with a suitable manure gives the best results. The biggest crop was obtained on a dry soil with limestone under, using old manure, ashes, and 2 cwt. of nitrate of soda per acre, the previous crop having been barley and turnips. Under these conditions the crop per acre was nearly 26 tons, the period of vegetation being 131 days. The next best crop was on a dry loam soil after barley, with 1½ cwt. of nitrate, the crop being 19½ tons per acre.

One of the worst crops, being under seven tons per acre, was obtained on medium loam, but the previous crop had been potatoes, and the only manure used was farmyard manure. Potash is a most important fertilizer for beets, and potatoes also are a very exhaustive crop in this respect, so that although farm manure is usually fairly rich in potash, it is highly probable the soil in question was deficient in this ingredient. That the fault lay with the manuring, and not solely with the proceeding crop, is shown by the result obtained after potatoes with no manure at all, in the shape of a crop of 16 tons per acre. This is in a measure explained by the additional fact that the latter period of vegetation was about 30 days longer than the former, and more particularly on account of the soil being alluvial, on deep gravel, alluvial soils almost always having great reserves of potash.

The exceptionally low results which have been obtained in some cases must not, therefore, be taken as an indication that a successful crop could not have been secured. Moreover, the average of the twenty-nine trials shows that very good crops must have been obtained in most cases to make it as high as it is.

After these six years of successful experiment, there can be no doubt that the growth of beets is likely to prove beneficial.

to farmers; but at present, owing to the depressed state of the sugar industry, there are no means of trying whether the extraction of the sugar can be effected as cheaply here as on the Continent. It has been proved beyond doubt that we can grow as well, if not better, so that only the question of extraction remains for solution. There appears to be a great number of wealthy persons desirous of trying different methods of infusing fresh life into agriculture, and here they have a means of putting to the test a plan which is, at all events, feasible, and not likely to be very costly, should failure follow the venture. Dr. Schack Sommer has spent both time and money in making trials as to growth during the past six years, and he now is ready to co-operate with those who are willing to attack the remaining problem of extraction. Under these circumstances it is strange if farmers themselves, through their associations, cannot assist in bringing this matter to the notice of land-owners, who are willing to experiment with a view to improving their property. We sincerely hope the laborious work Dr. Schack Sommer has accomplished, almost single-handed, will not be rendered void at this stage for the want of the co-operation of those whose interests will be most benefited by the establishment of a market for sugar beets.

THE HEARING OF COMMERCIAL CASES.

If the establishment of the London Chamber of Arbitration does nothing beyond bringing about special facilities for the hearing of commercial cases in the High Court, it will have accomplished a good deal.

It is something to be able to say that on and after the 20th of this month summonses may be entered upon the new list which is to be opened for commercial cases. According to the rules which have been drawn up to further the despatch of causes of this particular class, two lists will be kept open at chambers, one for summonses and the other for causes for trial. The lists will be open to cases arising out of the transactions of merchants and traders, more particularly in regard to the construction of mercantile documents, transport, insurance, and banking usages. Applications about town cases are to be made direct to the Judge who has charge of commercial business, the same procedure being adopted for country cases. Applications may also be made under the provisions of the Judicature Act, 1894, to dispense with the technical rules of evidence, so as to save the expense and loss of time which is caused by commissions to take evidence. The decision of the Judge sitting in the Commercial Court may also, by agreement, be made final. Another boon is the power of applying, in urgent cases, for the fixing of an early date for hearing.

After March 1st, Mr. Justice Mathew will sit to hear commercial causes as far as practical from day to day, while, when necessary and available, the other Judges of the Queen's Bench Division will assist in the disposal of commercial business.

THE SOLID PARAFFIN COMBINE.

This week the Scotch oil companies have been considering the subsidiary agreement between themselves, which is requisite for the completion of the Scotch-American combination, which was reorganised recently by the Standard Oil Company of America.

The matter is not entirely settled, though the majority of the Scotch Oil Companies are in favour of the combine. Even when completed there is no prospect of an immediate rise either in paraffin or candles. The candle makers, who it was feared would prove to be strongly opposed

to the combination, are for the time being content to let matters where they are, and adapt other tactics.

Presumably the prices which have been ruling the candle trade have been too low to be pleasant even with solid paraffin so much cheaper, and, in consequence, a move is to be made in another direction. Instead of being opposed to the raising of their raw material, they have elected to accept a reasonable advance, and to make the same the *locus standi* for combination among themselves to raise their price of the manufactured article. It is to be hoped, for the sake of the oil industry in Scotland, that the meeting which is to be held in London on Monday will lead to a satisfactory agreement among candle makers. At the same time, the success of the paraffin combine still rests with the candle makers. If the increased price adversely affects the price of candles, there will no doubt be a feeling in favour of reverting to the prices now ruling, which will mean that the enhanced price of paraffin will no longer be acceptable. Considering all things, however, it would appear that the interests of both paraffin producers and candle makers would profit most by endeavouring to substitute for the present cutting system a scale of prices which will be remunerative to the makers, and at the same time reasonable as far as the public is concerned.

PROSECUTION UNDER THE ALKALI ACT.

A PROSECUTION under section 17 of the Alkali, &c., Regulation Act, has recently been brought against the Maid and Wimbledon District Gas Light Company, Surrey.

This section of the Act provides that all necessary facilities for examination of the apparatus shall be afforded to the Inspector, and that no obstruction shall be offered him in the execution of his duty. The portion of the gas works which comes under the Alkali Act is that for the manufacture of sulphate of ammonia from gas liquor. It was alleged that the manager had shown the Inspector the place employed for this purpose, and had asserted that the foul gas coming sulphuretted hydrogen, &c., passed from the saturators to condensers, and thence to purifiers filled with oxide of iron. When asked pointedly whether all this gas was brought there and none taken elsewhere, the answer was given in the affirmative.

Suspicion, however, was aroused in the mind of Mr. Sutton, District Inspector, that the gas was being conveyed to the chimneys, not to the purifiers, and after close inquiry and search he discovered that the whole of the foul gases were so taken by a secret underground pipe to the chimney, and thence discharged into the air. They were passed through the purifiers, as had been alleged.

The question might arise how far this act of deceiving the Inspector was an obstruction under the statute? Certainly in a moral sense it was so, for it had the effect of misleading him and preventing his ascertaining whether the gases were properly treated before being allowed to escape into the atmosphere, and it could not be said in this case, "all necessary facilities" were rendered to the Inspector in his work of testing and examining.

Whatever argument might have been raised to show that an act of physical obstruction was contemplated by the framers of the Alkali Act, we are glad to know that the Local Government Board held the action of the manager, in deceiving and hoodwinking the Inspector, was offering an "obstruction," and they most properly gave sanction to the prosecution.

When we bear in mind the open-handed relation that has hitherto existed between the inspectors under the Alkali Act and the manufacturers, we are not surprised at the prompt action of the Inspector in taking serious action in a case of tricking like the present.

We are sorry to learn that the case was immediately closed by the defendants paying at once the amount of penalty and costs; thus taking advantage of the method of procedure under the Act, whereby the case is brought into the County Court. It would have been better had the case been argued in court, and thus publicity given to it.

DESTRUCTIVE FIRE AT A RUBBER MANUFACTURERS'.—A destructive fire occurred on Sunday on the premises of Messrs. G. Scott and Co., india-rubber manufacturers, Hague Bar, New Mills. Owing to the inflammable nature of the material the building was gutted and the machinery destroyed. About ten tons of oil arrived at the premises on Saturday, and this becoming ignited, added fuel to the flames.

Legal Intelligence.

HIGH COURT OF JUSTICE. CHANCERY DIVISION. (Before Mr. Justice Romer.)

IN RE CHESHIRE ALKALI CO.
INSTRUCTION OF CHESHIRE ALKALI CO. LTD.
petition for the reconstruction of this company was heard on May last.

Theobald, who appeared in support of the petition, said the company was presented by the company and the liquidator under the Stock Companies' Arrangement Act, and it asked the sanction of the court to a scheme come to for the reconstruction of the company. The original capital of the company consisted of 12,020 7 per cent. preference shares of £5. each, and 7,000 deferred shares of £5. each, were £50,000. of debenture mortgages, and ranking after the debentures there were mortgages on certain portions of the freehold and patents, amounting to £45,000. In the year 1893 the company had some difficulty with its creditors, and an arrangement was come to by which the lowest class of creditors received 8s. in the £, and the balance was still owing to them. The debenture holders' action was commenced on the 30th July, 1894, and the debenture holders included all the assets of the undertaking in the usual way. Upon the petition judgment had been given, and a receiver appointed, but no further had been done owing to the pendency of this petition. In November, 1894, a resolution was passed for winding up. The constitution of association required that the meetings should be held at the registered office of the company, but, as nearly all the shareholders resided in the neighbourhood of Crewe, the meetings were held at Crewe instead of at the registered office. The matter had been dealt with in Chambers and approved. The figures of the unsecured debts were £17,000. At the debenture holders' meeting more than half the entire amount was represented, that meeting only three voted against the scheme, holding £450. in them, and three others did not vote. With those exceptions the scheme was largely in favour of the scheme. Something of the same occurred at the meeting of creditors, one only voting against the scheme and six remaining neutral. The scheme proposed was shortly £10,000. by prior lien bonds, to postpone the £50,000. debentures, the holders of which were to take A shares in the new company. The mortgagees, whose mortgages amounted to £45,000., to reduce them to £30,000., and to take the difference between £10,000. and the reduced amount in A shares, which were to be 7 per cent. preference shares. Creditors to whom 12s. in the pound remained due to take B shares to the amount of their debts, and the other creditors would have C shares. The scheme was one that was beneficial to everyone interested in the company. The difficulty of the company had been due to the fall in the price of alkali, that was now going up there was a probability of a successful reconstruction hereafter.

Justice Romer granted the petition, and directed a stay of proceedings except in so far as they might be necessary in the reconstruction of the company.

QUEEN'S BENCH DIVISION.

(Before Mr. Justice Lawrence, without a Jury.)

JOHN KE, SIMPSON, AND SPILLER (LIMITED) v. THE JESSCOTT STEAMERS

In this case the plaintiffs, who were shippers of goods by the steamship *Minnie*, chartered by the defendants, claimed £123 damages for the loss of their goods by reason of the defendants' negligence in the lashing of the said goods by sea. The goods were shipped on May 9, receipt note given, upon the back of which were conditions limiting the defendants from liability for loss or damage to the goods but not in the case of negligence on their part. At the foot was the "Bills of lading in the terms of the Continental bill of lading to be given if required." The plaintiffs did not ask for bills of lading.

On May 12 the *Minnie* was in collision with another vessel, and she was held to blame. On May 15 the plaintiffs sent in a claim, and in reply the defendants wrote that they were not liable for loss or damage to goods caused by marine disasters. Bucknill, Q.C., for the plaintiffs, contended that the defendants were common carriers, and were liable for the loss of the goods unless they were protected by the special terms of the contract. The receipts and notes contained no condition that the shipowner would not be liable for loss or damage to goods caused by marine disasters.

Pickford, Q.C., for the defendants, said the defendants did not incur liability for negligence by incorporating into the contract the terms of the Continental bill of lading. It was not necessary to

expressly state that the goods were carried on those terms. In a very large number of receipts given to the plaintiffs the condition that the goods were shipped subject to the terms of the Continental bill of lading was rubber-stamped on the receipts. That was a notice to the plaintiffs of the terms upon which the goods were shipped. The Continental bill of lading exempted the defendants from liability, even in case of negligence.

Mr. Justice Lawrence gave judgment for the plaintiffs for the amount claimed, and said the contract was a complete one, and he did not feel inclined to import something into the contract which was to be implied from the previous course of dealing between the parties.

USING SALT TO REMOVE SNOW.

AT the weekly meeting of the Health Committee of Liverpool, held on Thursday week, Alderman Hawley in the chair,

Alderman Bligh asked whether it was true that 1,500 tons of salt had been thrown upon the streets after the recent snowfall. If that was so, the temperature must have been lowered to ten degrees below freezing point, which was exceedingly dangerous to the health of the community. He would like to know what the cost of the salt was.

Mr. Reynolds, the superintendent of the Scavenging Department, replied that it was from 10s. to 11s. a ton.

Alderman Bligh rejoined that that meant £700. or £800. which might have been spent upon the unemployed. He protested against the use of salt in future, and moved that its use in the clearing of snow be discontinued.

The Chairman said that the question which had been raised was of very great importance to the health of the inhabitants of the city. Salt had been used over an area which comprised the line of docks, Castle-street, Church-street, Lord-street, Bold-street, and other thoroughfares in the centre of Liverpool. It must be remembered that but for the use of salt in such an instance business would come practically to a standstill. They would not be justified in hastily coming to a resolution such as Alderman Bligh had proposed until Mr. Reynolds had time to consider an alternative remedy.

Mr. Reynolds remarked that salt was the only means he could adopt without stopping the traffic.

Mr. Grant urged that the remedy was to get a larger number of men to clear away the snow. Had Mr. Reynolds taken any means to inform the unemployed that work could be obtained by application?

Alderman Ruddin said that if salt were not put down the traffic would be stopped, and in that event many people would be thrown out of work. The Scavenging Department had had work for 2,000 men, and the unemployed knew where employment was to be found. He understood that only 450 men applied in the centre of the city on the first day, while in the South End there was not a single applicant.

Mr. Taggart held that this was not a question of the unemployed and the impeding of the traffic, but of the health of the inhabitants. In Scotland-road, where there was a large residential population, salt had been used as well as in the central parts of the city.

Alderman Grindley said that the late Dr. Gill (who was deputy-chairman of the Committee some years ago) advocated the use of salt, which acted as a deodoriser.

Mr. Mead-King thought it was worth inquiry whether some other means for the clearance of snow might not be found. In Wolverhampton this method was not used.

Mr. Houlding said that but for salt the snow would harden, and a hammer and chisel would be needed to loosen it. Salt helped the snow to fall into the sewers. The action of the Scavenging Department reflected credit upon it, and the reduction of temperature was not so dangerous as Dr. Bligh would have them believe.

Dr. Hope, the medical officer of health, observed that there was a choice between two evils. Either the snow might remain, as in many parts of the city, or it might be removed. Personal observation showed that the streets upon which salt had been used and from which the slush had been swept away were in better condition than those upon which salt had not been thrown.

Mr. Maxwell proposed that the Town Clerk be requested to communicate with the authorities in several large towns with the view of obtaining information as to their modes of dealing with a heavy snowfall.

Mr. Purcell considered that Dr. Bligh had made out a good case for inquiry. A Birmingham gentleman had told him (Mr. Purcell) that day that salt was not used in that city, public opinion being against the process. (Hear, hear.) Mechanical scrapers were used there.

Alderman Bligh urged that the Committee being the conservators of the health of Liverpool, it was their duty to stop anything detrimental to health.

Eventually it was decided that the Town Clerk write to the municipal authorities of several large cities and towns asking on behalf of the Committee what means (mechanical or otherwise) were employed in the removal of snow.

251102A

THE MERSEY AND IRWELL JOINT COMMITTEE.

THE usual monthly meeting of this committee was held on Monday last at the offices, Mosley-street, Manchester, Ald. J. Thompson presiding.

Mr. Haslam moved a resolution to the effect that a grant of £1,000. be made to the clerk of the Committee on account of expenses in the matter of the proceedings against the Salford Corporation. That sum was the amount of costs they expected to have to pay, and it included both the costs of the proceedings before the borough bench and the proceedings in the Salford County Court. The estimate was made up of costs of expert witnesses £600., counsel £200., and printing evidence, &c., £100., making £900., without including the office expenses. He might point out that the proceedings were against the authority which had plumed itself upon being the preserver of the Mersey and Irwell, which had, in past times, threatened other authorities with proceedings for pollution, and which, at the eleventh hour, when nearly every authority had been brought to book and had undertaken to construct works, had decided to test the decision of the Joint Committee, a position on the part of Salford which, to his mind, was unintelligible.

Mr. A. E. Reyner seconded the motion.

Mr. V. K. Armitage thought the matter should be deferred until the County Court judge had given his decision. As an unfortunate ratepayer of Salford he should then take the opportunity of saying something as to the scandalous expenditure to which the ratepayers of Salford had been put. He would, as a ratepayer, have to pay a portion of that £1,000., and he should also, in the same capacity, have to pay a proportion of the still larger sum which the Corporation of Salford had spent in connection with the proceedings. He hoped, when the matter was concluded, the elective auditor of the borough would inform the ratepayers of Salford what had been done in their name by their representatives.

The resolution was passed.

THE DISPOSAL OF SNOW IN MANCHESTER.

Mr. V. K. Armitage drew attention to the following passage in the report of the chief inspector, Mr. R. A. Tatton:—"I have to report that snow is being tipped by the Manchester Corporation into the river, causing considerable pollution. This matter has on former occasions been brought before the notice of the Committee, but no steps have been taken. As the sewage works at Davyhulme are in operation this method of disposing of the snow should not be permitted any longer; arrangements should be made for admitting it into the sewers." Mr. Armitage said the Committee had a right to expect some assistance from the Corporation of Manchester, instead of this additional offence against the Act. He did not think it was at all a proper thing for the Corporation to do.

Mr. Alderman Walton Smith said that as one of the representatives of the Manchester Corporation he was going down the river from Bailey-street Bridge on Friday, as a member of the Ship Canal Board, and saw the snow being tipped into the river from the Water-street Corporation yard. He thought it was a most disgraceful proceeding. The Lord Mayor was communicated with, and he believed steps were taken which would prevent such a practice in future. It was an outrage upon that Committee, and also upon the Ship Canal Board, and one which should be resented. Although he was a member of the Corporation he thought Mr. Armitage's remarks were fully justified.

The Chairman said the snow was tipped into the river without his knowledge or consent. He thought the Corporation should take the snow to yards, and allow it to melt there, a trench being constructed so as to prevent any rubbish collected with the snow getting into the river. There was no excuse for such a proceeding as that complained of.

Mr. Alderman Smith said he was afraid other authorities on the watershed were in the habit of doing the same thing.

Mr. Tatton, the chief inspector, said he had learned that the authorities of Rochdale and Bury were pursuing the practice complained of.

Mr. T. W. Killick said a return in the report showed that private individuals had made more progress in the direction of preventing river pollution than public authorities by carrying out schemes, and that was another reason why they should insist upon the authorities doing more than they did.

Mr. Haslam said it had taken three years to get works by seven authorities into operation.

THE MANCHESTER SEWAGE SCHEME.

The report of the consulting sub-committee referred to a letter from the Town Clerk of Manchester (Mr. W. H. Talbot) in reply to a communication from the Joint Committee. The Town Clerk said that in the first place it should be stated as to the past operations of the station, with a view to prevent pollution of the rivers, that the age was arrived at when the precipitation works at Davyhulme

were completed and taken into consideration. These works had cost more than half a million of money up to the present time. The cost of the chemical treatment of sewage carried out was not less than £10,000. a year, and if to that sum he added the payment for interest and sinking fund on the debt incurred, it would be seen that the expenditure from the rates of the city was not less than £30,000. a year. In regard to the chemical treatment, it might be further stated that the advice of Sir H. E. Roscoe had been taken and acted upon from time to time. A gradual improvement in the effluent had taken place. The letter continued:—"When the character of the Manchester effluent is compared with the results obtained by other considerable towns in the watershed, the position of Manchester appears to stand in a highly favourable light. It has already been explained to the Joint Committee that the Corporation, in addition to the chemical treatment, proposed to resort to downward filtration through land, in accordance with the view entertained by the Local Government Board as to the proper treatment of sewage. It has been already stated to the Board that 30 acres of land will shortly be ready for this purpose, and would ere this have been in operation but for delays in connection with the contract beyond the control of the Corporation. The River Committee wish thoroughly to test the results and efficiency of the working of this area before proceeding to further outlay in connection with land filtration. They have instructed the new city surveyor, Mr. T. de Courcy Meade, C.E., to report upon the subject, and they are desirous also that he should have the advantage of conferring with Sir Henry Roscoe upon the nature of the methods to be adopted. The Corporation are quite prepared to take the best and most effectual measures for dealing with their sewage, and producing an effluent in accordance with the requirements of the law and public utility. Indeed, having regard to the support given by them to the foundation of the Mersey and Irwell Joint Committee, and to their large interest in the Manchester Ship Canal, it cannot be supposed that they are seeking to delay or avoid the fulfilment of their responsibilities in this respect. The difficulties which the Corporation have had to encounter have been increased by the long illness and subsequent death of their city surveyor, Mr. John Allison, and by the subsequent period which has necessarily elapsed before their newly appointed city surveyor, Mr. Meade, could grapple with the difficulties of the situation. The Corporation trusts that this explanation may satisfy the Joint Committee that the Corporation are taking active measures for dealing with the question to the satisfaction of the Joint Committee."

Mr. Killick said he believed it was a fact that the sewage of the city did not as a whole go into these tanks, and when they came to the question of filtration the Sub-committee did not consider the reply of the Corporation was satisfactory. Taking into consideration, however, the fact that the Committee were now dealing with Salford, they had no recommendation to make with regard to Manchester at that meeting.

THE POSITION OF BURY.

In the case of Bury, the Chief Inspector reported to the Sub-committee that since the last meeting of the Joint Committee he had met the borough surveyor of Bury and ascertained that they had not yet commenced the construction of the outfall works. The Sub-committee saw no reason why they should not have been commenced at the same time as the intercepting sewers, and they therefore recommended that the Clerk be instructed to take the necessary proceedings and apply for further penalties against the Corporation of Bury for non-compliance with the order of the Court.

Mr. Killick, in moving the adoption of the proceedings of the Sub-committee as regarded Bury, said they felt that Bury had given no satisfactory reason for not proceeding with their outfall works.

Mr. Alderman C. Brierley took exception to the proposal of the Sub-committee with regard to Bury. He said he was certainly in sympathy with that Committee when they were prosecuting Bury for non-compliance with the steps directed to be taken for the purification of their sewage, but he did not see, now that they had moved in the matter, that the Committee should further ask for penalties. The Bury authorities had come into line with other authorities, and were doing what they considered necessary to comply with reasonable conditions. He explained at the last meeting that the borough engineer had received explicit instructions to carry out a sewage scheme with as little delay as possible. The engineer had his plans well advanced for the interception of the sewage when the other proceedings were commenced, and more than £30,000 worth of work had been let in connection with their scheme. He did not think the Joint Committee, as practical men, thought it was possible they could do the work in twelve months. The spending of £100,000. was no small matter for the ratepayers of a town like Bury. He did not think the Committee should get the backs of the people of Bury up when they were trying to do the work in a reasonable time, but that they should prosecute those who were defying the Committee, or who were merely pretending to do work. They should certainly not prosecute or persecute those who were expressing their full intention of complying with the wishes of the Committee.

oved, as an amendment to the Sub-committee's recommendation. "That that portion of the report recommending application for additional penalties be not approved, and that in lieu thereof consideration of the case of Bury be further adjourned for six months." He thought no Court would accede to the application of Joint Committee in the matter, but would grant Bury another six months without inflicting further penalties, so that money would be in vain. He believed that at the end of six months he should have a very favourable report to make as to the work done.

J. Cheetham seconded the amendment, which, after a brief discussion, was adopted by ten votes to four, the Chief Inspector concurring. The statement of Mr. Alderman Brierley that the plans for the works were in a forward state.

Extensions of time were, in accordance with the recommendations of the Consulting Sub-committee, granted to some authorities, and in the case of others the clerk was instructed to apply for penalties for offences against the Mersey and Irwell Joint Committee Act.

CHEMICAL SECTION OF THE MANCHESTER CHAMBER OF COMMERCE.

ANNUAL REPORT.

AT the last annual report of the Sectional Committee the Executive has met on five occasions, and the Sectional Committee once. The principal, amongst other subjects which have come under the consideration of the Executive Committee, are the Ship Canal Tolls, Employers' Liability Bill, and the Prosecutions for the Emission of Smoke.

The question of Ship Canal Tolls an important interview took place early in the year between the Executive and the manager of the Canal Company, and the Executive succeeded in showing that there were many anomalies in the rates. Mr. Stevens stated that for the sake of convenience the Ship Canal Company had adopted the rate of Trade classification for railway traffic, which was admittedly unjust and inconsistent in some respects, but that being widely published it offered a certain basis for their charges. If the Canal Company should afterwards adopt a schedule of their own, as was possible, the representations of the Board of Directors should be carefully considered.

Employers' Liability Bill.—The varying fortunes of this Bill were followed with great interest by the Committee, who forwarded to the Hon. H. H. Asquith, Home Secretary, a lengthy letter pointing out some portions of the Bill were either ambiguous or so framed as to open the door for unjust and fraudulent claims. The fact at which this criticism reached the Home Secretary was directly to the Bill had been returned from the House of Lords with certain amendments, and it will be remembered that rather than accept the amendments the Government dropped the measure. This affords your Committee a much desired opportunity of urging views upon her Majesty's Government at a more effective stage, should it be the intention to re-introduce the measure during the next session of Parliament, the Executive will take an early occasion to mine the Bill.

Prosecutions for the Emission of Black Smoke.—The renewed activity during the last few months by the Manchester Corporation in dealing with the emission of smoke from the works of chemical, iron, and other industries, has received considerable attention at the hands of the Executive, which has lost no opportunity of stating that it is in sympathy with the Sanitary Committee of the Corporation in its desire to improve the atmospheric conditions of the city neighbourhood, and to keep down to as low a minimum as possible the escape of unburnt carbon and deleterious vapours from the chimneys of manufactories in Manchester and the district.

As has been repeatedly admitted at the meetings of the Committee there is no insuperable difficulty in preventing the emission of smoke from boiler fires where these are used simply for driving engines. The Sectional Committee would not desire to shield any user of this class from the consequences of prosecution and fine, and ought properly to follow from the neglect of the provision of adequate boiler space and ordinary skilful firing.

The case is, however, altogether different (1) with those manufacturers who require the intermittent use of steam during the day for heating purposes, as, for example, in dye-works, print-works, &c., where large quantities of cold liquors have to be rapidly raised to boiling point. With sufficient boiler space and skilful firing, the occasional emission of black smoke is most difficult to avoid. (2) There is a class of manufacturers with whom intermittent firing is a necessity. They use direct coal fires, as in metallurgical and chemical operations where furnaces, stills, retorts, and so on, have to be heated. Very high temperatures must be produced, then the fires must be slackened down; shortly afterwards they must be re-opened, and once more a very high temperature quickly obtained, and so on throughout the work of the

day. In certain reducing operations and black ash furnaces black fires are required. In all these cases there is no means known to chemical experts which will altogether prevent a certain amount of black smoke. The Committee has, therefore, urged that discrimination should be shown in these prosecutions. In view of the recent alterations on the Committees of the Corporation, necessitated by the November election, it was thought well to seek another interview with the Sanitary Committee, and on December 21st a very large and influential deputation had an interview with the Sanitary Committee of the Corporation, placing these views before the Committee, being introduced by Mr. J. Thewlis Johnson, an ex-President of the Chamber. Abundant evidence was adduced by the Manchester Chemical and Allied Trades Association of the greater leniency and discrimination shown by municipal authorities elsewhere towards their staple industries. The deputation was most courteously received, and Mr. McDougall, who was in the chair, promised, on behalf of the Committee, that the most careful attention should be given to the views of the deputation.

The Firkin of Soap.—In reply to inquiries from members of the Chamber, who complained of the ambiguous nature of the "firkin" measure, the Committee expressed the opinion that, in order to avoid any dispute as to weight of soft soap, etc., the word "firkin" should be discarded altogether, "net weight" being substituted.

The Food and Drugs and Margarine Acts.—These Acts, which have been under the consideration of the Produce Sectional Committee, are now, together with the recommendations of that Committee, being considered by the Chemical Sectional Committee.

TECHNICAL INSTRUCTION IN LANCASHIRE.

THE Technical Instruction Committee of the Lancashire County

Council, in their report, recently issued, make the following recommendation:—That a sum of £4,320. be granted out of the County Technical Instruction Fund to provide 24 scholarships, of the value of £60. each, tenable for a term not exceeding three years, at the discretion of the Technical Instruction Committee—twelve for proficiency in science, to be tenable at the Owens College, Manchester, the University College, Liverpool, or such other public institution as may be approved of by the Technical Instruction Committee; four for proficiency in art, to be tenable at such institutions as may be approved of by the Technical Instruction Committee; six for proficiency in commercial subjects, to be tenable at the Owens College, Manchester, the University College, Liverpool, or such other public institution providing technical or commercial instruction as may be approved of by the Technical Instruction Committee; and two for proficiency in music, tenable at the Royal Manchester College of Music, or at such institution as may be approved of by the Technical Instruction Committee. It is also recommended that a further sum of £1,170. be granted to provide to scholarships for proficiency in the sciences of agriculture and horticulture—three senior scholarships of the value of £60. each, tenable for three years, at the discretion of the County Council at Cambridge, or at such other place giving higher instruction in agriculture and horticulture as may be approved of by the Technical Instruction Committee; and seven junior scholarships, of the value of £30. each, tenable for three years, at the discretion of the County Council, at the Harris Institute, Preston, or at such other public institution giving higher instruction in agriculture and horticulture as may be approved of by the Technical Instruction Committee. That a further sum of £1,100. be granted to provide 110 senior exhibitions, of the value of £10. each, tenable for one year, at such institutions as may be approved of by the Technical Instruction Committee, these exhibitions to be apportioned as follows:—Fifty for proficiency in science, twenty-five for proficiency in art, twenty-five for proficiency in commercial subjects, and ten for proficiency in music. That a further sum of £400. be granted to provide 40 junior exhibitions, of the value of £10. each, limited to candidates between the ages of 13 and 16, for proficiency in science and commercial subjects; and that £280. be granted to provide 28 exhibitions of £10. each for the study of agriculture and horticulture, tenable for one year at the Harris Institute, Preston, or such other public institution giving higher instruction in agriculture and horticulture as may be approved of by the Technical Instruction Committee. That a sum not exceeding £650. be granted to provide for the expenses of holding examinations for the County Council scholarships and exhibitions. That a sum of £40. 15s. be granted out of the County Technical Instruction Fund to provide two exhibitions of £10. each, and two exhibitions of £5. each for competition by the students who have attended the classes in connection with the University Extension Lectures, and to provide for the expense of holding these examinations. That a sum not exceeding £15. 15s. be granted out of the County Technical Instruction Fund to the Swinton Urban District Council for the purchase of apparatus and appliances. Six exhibitions of £10. are to be awarded to teachers in public elementary schools of Lancashire.

EXPORTS OF ALKALI AND BLEACH.

THE following figures, which are taken from the official foreign and colonial statistics of the United Kingdom, give the amount and value of alkali and bleaching materials shipped to the undermentioned countries during the month of December, 1894, as compared with the same month in 1893:—

Port.	ALKALI.			
	1893.	1894.	1893.	1894.
	Cwts.	Cwts.	£	£
Russia	305,300	198,582	122,062	72,295
Sweden and Norway	133,300	135,735	32,626	28,294
Germany	134,300	127,337	49,133	42,492
Holland	89,400	105,389	21,976	22,881
France	47,200	46,346	19,304	18,207
Spain and Canaries	231,200	308,150	103,092	128,117
Italy	199,100	215,792	74,128	79,114
United States	3,466,500	3,336,674	1,017,169	764,920
Australasia	141,700	230,645	50,822	79,132
British North America ..	216,400	234,367	65,705	61,242
Other countries	868,300	1,040,443	301,911	333,085
Total	5,832,700	5,979,460	1,857,928	1,629,779

Port.	BLEACHING POWDER, ETC.			
	1893.	1894.	1893.	1894.
	Cwts.	Cwts.	£	£
United States	786,600	786,548	334,141	311,071
Other countries	541,100	504,316	216,559	193,838
Total	1,327,700	1,290,864	550,700	504,909

Reports of Companies.

PRICE'S PATENT CANDLE COMPANY, LIMITED.

According to the report of the directors the profit for 1894 is about £69,600., to which has to be added £6,310. undivided profit from 1893, making together about £77,900. Deducting the dividend of 10s. per share, amounting to £18,750. paid in September, 1894, a sum of about £59,150. will be available for disposition, and the directors recommend that the usual sum of £12,500. be written off for depreciation; that £32,812. be applied in paying a dividend of 17s. 6d. per share; that £5,000. be added to the reserve fund; and that the remainder, about £8,800., be carried forward.

NEW EXPLOSIVES COMPANY, LIMITED.

The results of the workings for the years 1891, 1892, and 1893 showed a considerable loss, and no dividends were declared in those years. The year 1894 opened with a debt to the bankers of £2,500.; it closes with a cash balance of £7,682. The year 1893 showed a net loss of £2,819.; the year 1894 a net profit of £9,423., out of which the directors recommend a dividend of 5 per cent. for the year. During the past year £1,829. has been spent in renewals of plant and machinery, and an extended amending licence obtained from the Home Office, under which the heavy charges for magazine rent will be materially reduced, and the value of the property considerably enhanced. It is proposed to enlarge the works so as to admit of the manufacture of other explosives.

GAS LIGHT AND COKE COMPANY, LIMITED.

The accounts for the past half-year show a balance of £594,049. out of which the directors recommend a dividend at the statutory rate of 12 per cent. per annum, carrying forward £255,254. The improved financial position of the company enables the directors to announce that the charges for the hire of meters are abolished throughout the company's district. The weather during the months of November and December was very unfavourable for the sale of gas, so that, while the consumption up to the end of October showed the satisfactory increase as compared with the corresponding period of 1893 of 4¼ per cent., the net result for the half-year is an increase of 33 per cent. only.

JEYES' SANITARY COMPOUNDS, LIMITED.

The annual general meeting of this Company was held recently at 43 Cannon-street. After making ample provision for depreciation, &c., and placing £2,250. to reserve (bringing that fund up to one-half the subscribed capital), a dividend was declared at the rate of 10 per cent. per annum, in addition to a bonus of 2½ per cent., the whole free of income-tax, leaving a balance of £507. to carry forward.

BROKEN HILL PROPRIETARY CO., LIMITED.

The half-yearly meeting of shareholders was held in Melbourne last week. The chairman stated that there were still in the mine 1,000 tons of payable oxidised ore suitable for direct treatment, without including a large quantity of ore fit for concentration, and sulphide ore easily treated. Low returns were to be anticipated during the next few weeks owing to the open cutting being insufficient and the furnace out of repair. When these difficulties were overcome the usual yield would be resumed. A shareholder asked whether it was true that only two years of life remained in the mine. The chairman replied that the board were in hopes that it would last longer, and personally he felt expected that it would. There were extensive supplies of other classes of ore which had not up to date been treated, and experts reported that the mine would be payable even when the operations were confined to the production and treatment of oxidised ores.

THE PRINCIPLES OF LEAD AND COPPER SMELTING.

SMELTING can only properly be carried out on special ores of lead and copper, like the carbonates which reduce readily, or by careful regulation of charges carrying lead or copper in other forms, a proper intermixture of fluxes. There are, in a few favoured localities, ores of both copper and lead which run down in furnaces with little addition but the necessary fuel; but sulphuretted ores (copper pyrites and glance, and galena) cannot be so easily disposed of. To give, in a general way, the methods of smelting found in use in mining camps, and omitting the more complicated modifications adopted in large establishments, the following four classes will suffice:—

(1) The simple reducing smelting in reverberatory or water jacket furnaces of carbonates of lead and copper, or metallic copper or lead. Some flux is nearly always necessary for the gangue rock; iron or lime if quartz; or quartz, if too limey.

(2) Matting, that is, running the minerals out of the rock, not in fully metallic condition, but as a concentrated mineral or matte. This operation is conducted also in reverberatory or stack furnaces, usually after a partial preliminary roast. The matte or regulus is afterwards refined or shipped to establishments for that purpose.

(3) Partially roasting galena ores, oxidizing the lead and driving much of the sulphur, then a reducing smelting in which the oxidised lead reacts on any sulphides remaining, and only metallic lead remains. Here, as in first division, proper fluxes must be added to slag off waste rock, and keep all fluid in the furnace.

(4) The addition of iron ore, or roasted iron pyrites, to galena ores in smelting; the iron capturing the sulphur of the galena and leaving metallic lead. This process necessitates roasting and remelting a large quantity of matte formed.

The above is merely a general description of the principles involved in the ordinary processes of smelting; but the success of the last three depends wholly on a proper mixture of ores, proper roasting, and adjustment of fluxes. The mere presence of a little galena in a charge is not sufficient to insure success in smelting on the ground. To get good results, a mixture of ores is usually needed, high grade silver-bearing gold ores to bring up value of the bullion; ores with lime gangue to neutralise ores in quartz, so as to avoid, if possible, melting hard fluxes; reasonable transportation to market of bullion, cheap fuel, and many smaller considerations important in influencing commercial results.

The cost of smelting varies greatly, running from £1. to £6. per ton, according to locality and arrangements. The saving of silver and gold effected is, in properly conducted operations, from 90 to 98 per cent. of the assay value. The lead in one case, and copper in the other, are saved, adding so much to returns of the precious metals.

The smelting of lead, silver, and copper ores has been revolutionised by the introduction of the water jacket smelting furnace. Before its introduction, shaft or stack furnaces operated with air blast were built of stone or brick and lined with fire-brick. It is evident that such a furnace could not be kept running very long without stopping for repairs, as the fire-brick lining must burn out, and then a stoppage was required, the furnace blown out, and many days spent in re-lining. Such delays caused great losses in time of employees under pay, expense of new fire-brick lining, and additional cost of fuel and loss of bullion in starting up. Such furnaces had to be built of extraordinary thickness, and were very expensive.

The water jacket smelting furnace has overcome all these evils, and enables the operators to run the furnace for almost an indefinite period night and day, without stopping.

The expense of erecting water jacket smelting furnaces is very small. They require but a small stone foundation, and are very quickly erected.

MANUFACTURERS REFUSE NOT WANTED.—At the last meeting of the Glossop Town Council, the Sewage Committee reported that they did not deem it advisable to include in the scheme the effluent from the works of Messrs. Potter and Co., calico printers, Ditching.

THE CHEMICAL INDUSTRY OF ITALY.

THE U.S. Consul-General at Rome has made the following return of the output of chemical and mineral products of Italy during 1893, the latest year for which returns are available:—

Product.	Quantity. (Tons.)
Manganese	810
Zinc	132,637
Lead	229,004
Antimony	1,193
Mercury	19,450
Crude Sulphur	16,300
Melted Sulphur	401,371
Mineral Salt	16,790
Asphalt, Cement, and Bitumen	25,980
Petroleum	2,652
Alum	4,200
Boric Acid	2,847
Graphite	1,465

The Consul states that the year 1894 will show a very considerable increase over 1893. The following mines were in full operation at the beginning of the industrial year 1894:—Manganese, 5; zinc and lead, 104; antimony, 6; mercury, 12; sulphur, 604; mineral salts, 15; asphalt, cement, and bitumen, 12; petroleum, 8; aluminium, 1; boric acid, 11; graphite, 5.

CHEMICAL MANUFACTURE IN 1894.

The following chemicals were produced during the fiscal year ending June 30th, 1894:—

Product	Quantity. (Tons.)
Sulphuric Acid	59,352
Nitric Acid	1,990
Chloric Acid	4,599
Carbonic Acid	13
Borax	1,099
Aluminate of Soda	200
Alum	2,050
Sulphate of Ammonia	717
Sulphate of Soda	4,920
Bisulphate of Soda	1,915
Silicate of Soda	2,130
Sulphate of Copper	811
Sulphate of Zinc	30
Sulphate of Magnesia	1,106
Carbonate of Soda	700
Vermilion	2,400
Litharge	1,430
Oxide of Zinc	375
Nitrate of Potassium	1,000
Nitrate of Ammonia	3
Chloride of Barium	50
Hydrogen Peroxide	60
Corrosive Sublimate	0.4
Red Precipitate	0.8
Carbon Bisulphide	1,416
Yellow Prussiate of Potash	200
Carbonate of Magnesia	50
White Lead	3,530
Oxide of Iron	85

THE SMOKE QUESTION: VISIT OF FRENCH ENGINEERS.—The Central Press learns that some of the highest engineering experts of France will shortly visit some of the large provincial towns in the Midlands, in Yorkshire, the North, and other parts of Great Britain, for the purpose of studying the smoke question. About nine months ago the Paris authorities issued an invitation for a competition of various methods of dealing with smoke, in order to prevent its escape into the atmosphere, either from house or factory chimneys, railway furnaces, &c., offering prizes of 10,000, 5,000, and 2,000 francs respectively for the best methods. The list for the competition closed at the end of October last, when more than one hundred competitors had entered from Great Britain and various parts of the Continent. The award is likely to be made within about a month, but in the meantime the experts will proceed to this and other countries where the methods have originated, for the purpose of examining them in practical operation. It may be mentioned that this is the first occasion on which a National Committee of Inquiry has been appointed to investigate this subject; and inasmuch as we are the greatest sufferers of any nation in the matter of a smoky atmosphere, we are indebted to our French neighbours for having taken the lead in such an important matter affecting health and sanitation.

Trade Notes.

THE PHOSPHO-GUANO CO., LTD.—The nineteenth annual general meeting of the shareholders of this company will be held at the City Terminus Hotel, Cannon-street, London, on Friday, the 22nd inst., at 12 o'clock noon, to receive the report of the directors and to transact the ordinary business of the company. The transfer books will be closed from the 9th to the 22nd instant inclusive.

OUTPUT OF GOLD.—The Champ d'Or Deep Level Gold Mining Company announce total output for the past month 1,415 ounces, being 983 from mill and 432 cyanide. The Orion Gold Mining Company notify:—Details of working for December, 1894: Stamps working, 40; number of days mill ran, 26; yield from plates, 1,521.20 ounces of gold; tailings treated by cyanide, 2,376 tons.

DEATH UNDER CHLOROFORM.—Sarah Clegg, aged twelve, of Thornham Road, Crompton, died at the Oldham Infirmary recently. She was chloroformed to undergo an operation to remove an abscess from her hip joint by the junior house surgeon and Dr. Fawsitt. Ten minutes later it was noticed that the patient's pulse was becoming weaker, and she died a few minutes later. She had been admitted the previous day.

RISE IN THE PRICE OF OLIVES.—The olive crops have failed both in France and Spain, and there is consequently a considerable rise in prices in all of the London markets. The weather has been very unfavourable for the growth of the fruit, and the frost has spotted them to a serious extent. French growers can find scarcely any sound and perfect fruit, and in Spain the crop is barely one-eighth of the normal quantity.

WOOD PULP via THE SHIP CANAL.—In consequence of the ports in the Baltic having been blocked during the early part of the year by ice, the imports in Manchester of wood pulp, which comes chiefly from Sweden and Norway, have not been so large as in December last, there having been a decrease of 14,224 packages. The number imported during the month was 18,212 packages, against 32,436 in December. With the exception of Hull, however, all the ports where this product is imported into the country have experienced a heavy decrease. A full cargo of this commodity was brought to Manchester on Monday by the steamer *Kate Foster*, which was the only arrival on the early tide.

DIAPHRAGMS FOR ELECTRO-CHEMICAL OPERATIONS.—The Electro-Chemical Works at Griesheim, near Frankfurt a/M., treat chloride of potassium to produce potash and calcium chloride. The secret lies in the nature of the diaphragms which separate the kathodes from the anodes, and which allow the electrolysis to be effected without increasing the resistance, and consequently the tension. The electrodes are in general of platinum, retort-coke, lead peroxide, iron sulphide, phosphides or silicides, and polarisation is combatted by chemical and mechanical means. Kathodes of mercury allow of the electrolysis of solutions of KCl even without diaphragms. On treatment with hot water the amalgam yields caustic potash and mercury. The Associated Works at Leopold's Hall use parchment paper as a diaphragm. To the liquid at the anodes they add 2 per cent. of calcium or magnesium chloride, which, on contact with the alkaline liquid of the kathodes, forms a preservative deposit of basic chlorides upon the parchment paper.

HEAVY PENALTIES FOR MILK ADULTERATION.—At the Manchester City Police-court, on Wednesday of last week, before Mr. Headlam, the stipendiary magistrate, James Charnley, of Lark Hill Farm, Haslingden, was summoned at the instance of the Manchester Corporation for consigning to a Salford milk dealer milk which had been deprived of fat. Inspector Holland stated that in consequence of certain information he had received he went to the Victoria Station on January 2 and took a sample of milk from the defendant's can, consigned by him to a dealer in Salford. He afterwards submitted the sample to Mr. Estcourt, the city analyst, to be analysed. The city analyst having reported the milk to be below the standard, the Inspector was instructed to go to the defendant's farm and take another sample of milk direct from the cows, and this he did. Mr. Estcourt proved that the sample taken from the defendant's milk-can, as compared with the sample taken direct from his cows, had been deprived of fat to the extent of 56 per cent., and that the milk taken from the cows was of very good quality. Mr. Withers, solicitor, Blackburn, who represented the defendant, pleaded guilty, and asked for a lenient penalty. Mr. Headlam said that the case was a very serious one, and a fine of £10. and costs would be imposed. The prosecution was conducted by Mr. A. T. Rook, superintendent of the sanitary department. At the same court, Joshua Critchlow, Coltes Field, Hartington, Derbyshire, was fined £5. and costs for consigning to a Manchester milk dealer milk which had had water added to it. Summonses had also been issued against two milk dealers supplied by Critchlow, but it having been proved to the satisfaction of the court that Critchlow was the real offender, Mr. Rook withdrew the summonses.

THE PETROLEUM LAMP ACCIDENT.—On Monday last in one Lancashire and Yorkshire Railway Company's stables at the Depot in Irwell-street, Salford, a workman was trimming a lamp when it exploded. The flames extended to a loft containing tons of straw, which was burned. The Salford fire brigade acted in preventing an extension of the fire to other premises.

AT A PAINT AND COLOUR WORKS.—Last week a fire broke out at Messrs. Ashcroft and Co.'s paint and colour works, situate in street, Manchester. Mr. Savage and a detachment of the Fire were speedily on the scene, and in about an hour's time the fire had been completely subdued. The first floor over the shop was saved. The origin of the fire has not been clearly ascertained.

SALT UNION LITIGATION.—In the case of the Salt Union v. Sir Richard Webster, Q.C., on behalf of the defendant, on 7th, made an application to Mr. Justice North in the Chancery for all the motions brought by the plaintiffs to be dismissed, an inquiry as to the amount of damages sustained by the defendant in consequence of an undertaking he had given not to proceed with his boring. His Lordship dismissed the motions, and granted the costs asked for. The defendant's costs in the motions to be costs in the cause.

AT A RUBBER WORKS.—Last week a fire broke out at the rubber works of Messrs. Macintosh and Co., Cambridge-street, London-Medlock. The Fire Brigade at once proceeded thither with a force of men, and on arrival found a large store-room on the floor on fire. The rooms above had also been ignited. The people had got some of their private jets to work, and when, in a few minutes, two streams were directed on the flames by the firemen the fire was speedily subdued. The store-room and contents were completely damaged, whilst an adjoining building suffered to a slight extent.

HOUSE FIRE AT A LINOLEUM WORKS.—On Saturday afternoon a fire broke out at the large works of Messrs. Williamson, Lancaster. The works cover several acres of ground, and the buildings are arranged from each other to prevent total destruction in case of fire. The building in which the fire occurred is used for the manufacture of linoleum. The mill has been twice burned down before, the last being about four years ago. When rebuilt it was erected on a proof principle, and divided into two portions by fireproof iron doors also separated the place into sections. The buildings are three stories high, 13 windows long, and seven wide, with bays of 14 ft. 2 in. The fire was discovered between two and three o'clock. The firemen were working in other parts of the works, and they, along with the fire brigade belonging to the works, which is always within call, were unable to keep the flames in the corner of the building where they originated. The wind, however, blew the flames along and into the building, and in a very short space of time the fire assumed alarming proportions. The town fire brigade was telephoned to the spot, with the steamer and all appliances. The immense volume of water that was poured into the burning building, the fire increased, and in a few hours the fire fell in with a great crash, and the flames penetrated every part of the immense building. The fire brigade behaved splendidly, and had to work in blinding smoke, with wet cloths round their faces and noses, in consequence of the fumes. The efforts of the firemen were directed to saving the other buildings and the walls and the burning mill, so as to save the valuable machinery with which the works were stored. In this they were only partly successful, and the loss is estimated at many thousand pounds. On Sunday the fire was smouldering. Nearly all the valuable machinery was saved, but the heavy grinding machines fell through and were broken. The loss is variously estimated, but it cannot be less than £30,000. or more.

Market Reports.

TAR AND AMMONIA PRODUCTS.

As continues without alteration. Carbolic acid is quietly steady; it is quoted at 1s. 9d., but the actual value is 1s. 7½d.; creosote is unaltered at 5½d. Other products continue the same and position, solvent naphtha being flat, with a very small rise. Pitch is steady at 35s. for spot, and 34s. forward, f.o.b. Hull.

The price of ammonia is steady, though quieter. Owing to the weather, the demand from the Continent has ceased for the time being. Prices in consequence are slightly easier, though it is not a heavy business that has been done. London is quoted at 11s. 6d., Liverpool 11s. 6d., Hull 11s. 5d., and Leith 11s. 7d.

REPORT ON MANURE MATERIAL.

The severe weather has almost brought business in manure material to a standstill, prices being to a large extent nominal. The quotation for 75/80% Florida phosphate rock remains at 7½d. to 7¾d. per unit, in cargoes c.i.f. to United Kingdom ports, 1895 steamer shipment. For Peace River rock 6½d. per unit asked; for South Carolina River rock 6½d., and for 60/65% Algerian 6½d. per unit, but probably a fraction less in each case would be business for any important quantity. Cargoes of River Plate bones rather hang fire, and £4. 7s. 6d. per ton would now be outside value. Prices quoted for crushed East India bones altogether preclude business. The actual value is about £4. 7s. 6d. per ton, ex quay. There are now sellers of Bombay bone meal at £4. 7s. 6d. on spot, and probably a shade under this price would be accepted for February-March steamer shipment. Owing to arrivals the market for nitrate of soda is easier: on spot, 8s. 7½d. would be business for ordinary quality, but 8s. 10½d. per cwt. is still asked for fine. Due cargoes are worth about 8s. 7½d. per cwt.

There is nothing fresh to report in miscellaneous material.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron, firm: Scotch warrants close at 41s. 3½d., Middlesbrough 34s. 4d. cash, and hematite 42s. 3d. Copper, quiet: Chili bars, G. O. B.'s and G. M. B.'s, closed at £40. 2s. 6d. to £40. 7s. 6d. cash, and £40. 10s. to £40. 15s. three months. Tin, easier: Straits closed at £60. 7s. 6d. to £60. 17s. 6d. cash, and £60. 7s. 6d. to £60. 17s. 6d. three months; Australian, £60. 10s. English ingots, £63. 10s. to £64. Lead, steady: Spanish, £10s. to £9. 11s. 3d.; English, £9. 12s. 6d. Silesian spelter: ordinary £14. 2s. 6d. Nickel, 1s. 3½d. Antimony, £33. 10s. Quicksilver first hands, £6. 10s.; second hands, £6. 9s. Copper share dull: Cape, 1½ to 1¾; Copiapo, 1½ to 1¾; Libiola, 3¼ to 3½; Mason and Barry, 1¼ to 2; Rio Tinto, 13½ to 13¾; Tharsus 4½ to 4¾.

GLASGOW, WEDNESDAY.—Market firm, with fair business. Scotch done at 41s. 3d. and 41s. 4d. cash; closing with buyers at 41s. 3½d. cash, sellers ask 41s. 4½d. Cleveland done at 34s. 3½d. and 34s. 4d. cash; closing with buyers at 34s. 4d. cash, sellers at 34s. 5d. Cumberland hematite closes with buyers at 42s. 3d. cash, sellers ask 42s. 3½d. Middlesbrough hematite closes with buyers at 41s. 4½d. cash, sellers ask 41s. 6d.

WOLVERHAMPTON, WEDNESDAY.—Business in manufacture iron firm to-day, owing to the efforts of the manufacturers to establish an association. Colonial buying slightly more animated, but the quantity of work on offer as a whole was small. Merchant bars quoted £5. 10s. to £6.; common bars £5. upwards; black sheets double £6. 7s. 6d., and galvanised £9. 10s. Steel stamping sheets from 10s. singles to £10. 10s. ladders. Steel wire rods, £5. 12s. 6d. delivered here, and Bessemer plating bars, £5. 2s. 6d. Pig iron still at late quotations.

MISCELLANEOUS CHEMICAL MARKET.

In the alkali trade there is little change in values to report. Prices all round continue at a low level, and there is no immediate prospect of improvement. Ammonia alkali is now again offering by the lead makers at £3. per ton, bags, f.o.r. makers' works. Soda crystals 37s. 6d. per ton, bags, f.o.r. Caustic soda is slightly easier, a current spot quotations may be taken as follows, viz.: f.o.b. Tyne 77%, £10.; f.o.b. Liverpool, 74%, £8. 15s.; 70%, £7. 15s.; 60% £6. 15s. nett per ton, 10-ton lots and upwards. Bleaching powder steady at £7. 2s. 6d. to £7. 5s. per ton, f.o.r. makers' works; former sales being still made at £7. per ton. For certain markets for export lower prices have been taken. Chlorate of potash and soda are with further change, and are respectively, for spot delivery, 5d. to 5½d. and 7½d. per lb. Recovered sulphur quiet at £3. 12s. 6d. to £3. 1 per ton. In saltcake, 95%, there is rather a better feeling in the market, but no actual advances are paid for near deliveries: price nominally being 15s. per ton, f.o.r. Sulphate of copper £15. 10s. per ton. Brown acetate of lime £5. 5s. to £5. 10s. per ton, c.i.f. For potash there is no demand. Other acetates and acetic acid have generally a weak tendency. White powdered arsenic is still in short supply, a price firm at £14. 7s. 6d. per ton, Garston. Yellow prussiate of potash irregular at 9½d. to 10d. per lb. Carbolic acid crystals 5½d. for 39/40°. Other grades of carbolic and cresylic acid quiet. Aniline oil and salt the prices have undergone little variation of late; present values are 5d. to 5½d., and 4½d. to 4¾d. per lb. respectively.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

LS.—Palm oil is steady, though quiet. There has been practically no business doing. Olive is firm and dearer. On spot, sales of Syrian oil reported at £30. per ton. Linseed is steady and prices firm, pool makes in export casks being quoted 21s. to 22s. per cwt. Linseed is quiet; Liverpool refined is quoted at 17s. 9d. to 18s. 6d. cwt., but is fairly steady thereat. Castor oil is steady, good ds Calcutta being held for 2½d. First pressure French is not so y, sales having been made at 2d., though 2½d. is asked in most y. Tallow is only in limited inquiry, but prices keep steady. Resin ady at fairly good values, there being a satisfactory demand in spot ess. Spirits of turpentine are steady and in moderate request, at d. to 21s. 9d. per cwt. Petroleum is very firm, with American d. to 6d., according to quality; and Russian refined 4d to 4½d. gallon.

LOURS are steady, without alteration in prices. es: Oxfordshire, common, £10., medium, £12., best, £15., yshire, common, 40s.; medium, 50s., best, 60s.; Welsh, best, seconds, 50s., and common, 18s.; Irish, Devonshire, 40s. to French, J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Umber: ish quiet; Devonshire, 50s. to 55s. White lead, £16. Red lead igned. Venetian red, £6. to £10. Cobalt: Prepared oxide, d.; black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2, l. Oxide of iron: Common, £7.; medium, £10.; finest, £20. oxide, £22. 10s. to £25.

TYNE CHEMICAL REPORT.

TUESDAY.

emicals are rather more active now that the works here are get- into a position to execute orders, and there has been a fair amount isiness passing within the last week, principally for bleach and ic. Prices practically remain unchanged.

aching Powder, softs, £7. 5s. per ton, nett; hard, £7. 10s. per ton, caustic soda, 76/77%, £9. 15s. per ton, nett; do., 70%, £8. on, nett; recovered sulphur, 2 cwt. bags, £4. per ton, nett; ash, 48%, £3. 15s. per ton, nett; do., 52%, £4. 2s. 6d. n, nett; do., 56%, £4. 10s. per ton, nett; alkali, 36%, £2. 15s. n, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. per ton, nett; do., 52%, £5. 5s. per ton, nett; hyposulphite of 5-7 cwt. casks, £5. 10s. per ton, nett; do., 1 cwt. kegs, £6. 2s. 6d. n, nett; silicate of soda, 75° Tw., £2. 17s. 6d. per ton, nett; 100° Tw., £3. 12s. 6d. per ton, nett; do., 140° Tw., per ton, nett; soda crystals, casks, £1. 16s. 6d. per ton, gross weight; do., 2 cwt. bags, £1. 16s. 6d. per ton, nett; ate of potash, 5½d. per lb., less 6%; pearl hardening, per ton, nett; pure white sulphate of alumina, £4. 2s. 6d. n, nett; blanc fixe, £7. 10s. per ton, nett; chloride of barium, 10s. per ton, nett; carbonate of alumina, £28. 15s. per ton, aluminate of soda, £33. 15s. per ton, nett; in 5 ton lots, £28. per ton, nett.

LT.—South Durham salt steady and rather scarcer, at 9s. 6d. per o.b.

ALS.—The trade is still very dull, and prices drooping. A great of the collieries are only working short time. To-day's prices are der:—Best Northumbrian steam, 8s. 10½d. to 9s. per ton; d quality, 8s. 4½d. to 8s. 6d. per ton; small steam, 3s. to 3s. 3d. n; bunker coals, unscreened, 6s. 9d. to 7s. per ton; do., best ed, 8s. 9d. to 9s. per ton; household coals, 10s. to 11s. per gas coal, in good demand, 7s. 3d. to 7s. 9d. per ton. Coke 13s. to 13s. 6d. per ton.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

ere is no improvement in the position of general chemicals here, ie resumption of work at the chemical factories of the Newcastle it will no doubt tend to give some better balance to market tions and dealings. Prices meanwhile lean to the fall, and both c soda and bleaching powder must be set down at lower values hose of late usually quoted by unofficial authorities.

phate of ammonia has been a trifle quieter. This, however, rs attribute merely to the turn of the month, and their quotations n at about £11. 8s. 9d. to £11. 11s. 3d. for prompt.

e mineral oil and paraffin section is virtually unchanged, paraffin e (naphtha) still slowly on the descent as for the past few weeks, ow at about 4½d. The others are steady at the old quotations. representatives of the Scotch Oil Companies conferred again at the of last week, but whatever may elsewhere and otherwise be ed, there was no definite progress made with the solid paraffin ican matter, or any other matter. Things are still in suspense.

Chief prices current are:—Soda crystals, 35s. to 36s. nett, Tyne; soda ash, 48/52°, £3. 17s. 6d. to £4. 5s. nett, Tyne; white alkali, 48/52°, £4. 10s. to £5. 5s. nett, Tyne; alum in lump, £5. 10s. nett, Glasgow; caustic soda, white, 74° £9., 70/72° £8., 60/62° £7., and cream 60/62° £6. 17s. 6d., all nett, Liverpool; bleaching powder, £7., nett, Tyne; saltcake, 17s. 6d.; borax, English refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4½d. nett, f.o.b. Glasgow); bichromate of soda, 3½d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chloride of potash, 5½d. less 5%, Liverpool; nitrate of soda, 9s.; sulphate of ammonia, £11. 8s. 9d. to £11. 11s. 3d. prompt, f.o.b. Leith; sal-ammoniac, first and second white, £39. and £37. nett, any port, sulphate of copper, £15. 10s. less 5%, Liverpool; paraffin scale, hard 1½d.; and soft, 1½d. to 2d. per lb.; paraffin wax 120° semi-refined, 2½d.; paraffin spirit (naphtha), 4½d. per gallon; paraffin oil (burning), standard No. 1 grade, 4½d. at works, for Scotch buyers (English sales, ½d. to ¾d. lower); ditto (lubricating) 865° £4. 5s.; 885° £4. 10s. to £5., and 890/895° £5. to £5. 10s. Week's imports of sugar at Greenock were 5,000 bags beet refined.

THE COPPER MARKET.

Messrs. Harrington and Co., in their fortnightly report, dated Liverpool, February 1st, 1895, state:—

Chili Charters for the second half of January are advised as 850 tons, against 800 tons for the previous fortnight, making 1,650 tons for the month. The quantity same time last year was 1,350 tons. Exchange, 14¾d. Since our last the market for G.m.b.'s has been quiet, and values easier, about 2,700 tons changing hands at £41. cash and £41. 7s. 6d. three months, down to £40. 3s. 9d. and £40. 11s. 3d. respectively, declining to-day to £40. 2s. 6d. cash and £40. 10s. three months. The total stocks in Liverpool, Swansea, London, and Havre are 51,048 tons, against 50,267 tons on the 18th ult., showing an increase of 781 tons for the fortnight, but with a decrease for the previous fortnight of 497 tons, makes the increase for the month 284 tons. The stocks include about 1,800 tons of copper sold, but not yet delivered to smelters.

The visible supply for the fortnight is 54,913 tons, against 54,112 tons on the 18th ult., showing an increase of 801 tons. The month's figures show an increase of 230 tons. Refined and manufactured sorts are quiet, but steady. Quotations being:—Tough cake, £43. to £43. 10s.; best select, £43. 10s. to £44.; Indian sheets, £48. to £48. 10s.; strong sheets, £51. 10s., and yellow metal sheets, 4½d. to 4¾d. per lb. The sales of furnace material comprise:—50 tons Mexican ore, at 7s. 10½d.; 16 tons Cueva de la Mora precipitate, to arrive, at 7s. 9d.; 673 tons Norwegian Matte, on private terms; and 300 tons Norwegian precipitate, of 70 per cent., at 8s. 4½d. per unit for the continent.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—The markets are dull and without much change, the scarcity of seed during this month and next so far having had no perceptible effect in regulating the prices of oils. The imports of Linseed during the week have been 7,996 qrs., viz., from Libau, 6,384 qrs.; Reval, 2,062 qrs.; Königsberg, 500 qrs.; and Harlingen, 20 qrs. Linseed Oil steady at 19s. 3d. to 19s. 4½d. naked spot, and 19s. Feb.-April; May-August offer at 18s. 3d., and Sept.-Dec. worth 18s. Pale and ordinary boiled and refined from £1. to £2. per ton extra. Export for the week, 1,540 cwt. The import of cottonseed during the week has been 16,355 tons from Alexandria, and an import of 208 tons of Brazilian from Macao. Refined cotton oil 5s. per ton lower, closing steady at 15s. 7½d. naked spot. Feb.-April offer at 16s., and May-August at 16s. 6d. Crude on the spot offers at 14s. 3d. naked. Export of refined for the week, 4,180 cwt. Spirits of turpentine dearer, from 21s. 9d. per cwt. Castor oil first pressure 2½d. per lb. Cod oil, £16. to £18. per ton. Soft soap, 14s. 6d. per cwt. Sod oil, for curriers, etc., £15. to £22. per ton. Boiled drying oil, £13. per ton. Engine and cylinder oils, £12. to £24. per ton.

CAKES.—Linseed cakes: A firmer market for spot and near deliveries. Seed will be short all this month and next. 95% pure, £6. 7s. 6d. to £6. 10s.; Russians, best makes, £6. 2s. 6d. to £6. 7s. 6d.; ditto, inferior makes, £5. 10s. to £5. 15s. Oilcakes, £5. 7s. 6d. Cotton cakes very firm: best makes, £3. 10s.; seconds, £3. 7s. 6d. Rape cakes: feeding, £4. 2s. 6d.; Black Sea, £2. 12s. 6d.; round feed cakes, £5. 12s. 6d. per ton.

PAINTS continue to find a good market. Dry colours: Venetian red, £3. 17s. 6d. per ton; oxide of iron £7. 10 to £18. per ton; yellow

ochre, £3. 15s. per ton; blue black and mineral black, £4. to £4. 5s.; Ultramarines from 3d. to 8d. per lb. Lime blue from £16. per ton. Venetian red, oxide of iron, black, blue, green, and yellow ochre paints from £12. per ton. Washable distemper colours in varied shades from £18. to £24. per ton. White lead and red lead unchanged. Imperial black varnish £5. 10s. per ton. Ready-mixed paints from £25 per ton. Copal varnish, from 7s. per gallon. Oak varnish from 5s. 6d. per gallon. Brunswick black, 4s. per gallon.

New Companies.

Electrical Oil Refining Co., Ltd.—CAPITAL, £5,000., in shares of £1. each. This company has been formed to acquire a patent relating to the purifying and bleaching, etc., of oils and fats by electricity, and obtaining a colouring matter therefrom.

Shill (Patents) Gold Extraction Co., Ltd.—CAPITAL, £25,000., in shares of £1. each. This company has been formed to acquire patents for the extraction of gold from ore. The subscribers to the memorandum of association are: G. Baintson, 2, Copthall Buildings, gentleman; D. H. McGowan, Walthamstow, merchant; F. W. Elliott, Emmore Lodge, Croydon-road, S.E., gentleman; A. J. Secretan, Bloomfield House, London Wall, accountant; W. H. Hart, Fontenoy, Hampstead, gentleman; M. S. Nigers, Highbury New Park, gentleman; A. Smith, Tottenham, shorthand writer.

William Warne and Co., Ltd.—CAPITAL, £300,000., in shares of £10 each. This company has been formed to acquire and carry on the business of indiarubber manufacturers, now prosecuted by Wm. Warne and Co., at London and Tottenham. The subscribers to the memorandum of association are: E. G. Coles, 29, Gresham-street, indiarubber manufacturer; G. F. S. Warne, 29, Gresham-street, indiarubber manufacturer; E. H. Coles, 29, Gresham-street, indiarubber manufacturer; O. G. Coles, 29, Gresham-street, indiarubber manufacturer; E. S. Warne, 29, Gresham-street, gentleman; E. G. Coles, 29, Gresham-street, gentleman; James Burbridge, Tottenham, indiarubber manufacturer.

The Patent List.

This list is compiled from Official sources in the Munich Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.
 Manufacture of Sulphurous Anhydride and its Derivatives. J. E. 1,360. January 21.
 Purifying Air from Dust, Soot, and other Impurities. E. Theisen. 1,360. January 21.
 Improvements in Filtering Liquids. A. J. Boulton. 1,407. January 21.
 Improvements in Manufacture, Treatment, Purification, and Production of Salts and Compounds of Alumina. J. L. Kessler. 1,419. January 21.
 Apparatus for the Manufacture of Water Gas. A. G. Glasgow. 1,420. January 21.
 Process and Apparatus for Desulphurizing Ores. J. V. Johnson. 1,421. January 21.
 Improvements in Manufacture of Ink. F. O. Dagnall. 1,525. January 21.
 Improvements in Method and Apparatus for Concentrating Sulphuric Acid, etc. T. G. Webb. 1,575. January 23.
 Crushing Ores and Applying Liquid Solvents for Extracting Gold. Silver. A. de Courcy Scott. 1,592. January 23.
 Purifying and Desulphurizing Tar Oils and Petroleum to form Burners and Lubricating Oils. F. Hensler. 1,604. January 23.
 Reducing Paper-stock to Pulp. A. P. Brown. 1,615. January 23.
 Improvements in Vacuum Drying Apparatus. W. L. Wise. 1,616. January 23.
 Furnaces for Producing Carbide of Calcium. E. Gearing. 1,807. January 23.
 Manufacture of Pigments. D. Everett and T. B. Cullen. 1,811. January 23.
 Fuel Briquettes. A. E. Veadon and J. Richardson. 1,847. January 23.
 Treating Fume in Lead Works, etc. J. Warwick. 1,852. January 23.
 Improved Refrigerating Apparatus. W. J. E. Koch. 1,901. January 23.

Gazette Notices.

PARTNERSHIP DISSOLVED.

E. W. T. JONES and F. DUESBURY, manufacturing chemists and varnish makers, Wolverhampton.

BANKRUPTCY ACTS, 1883 and 1890.

Adjudication.

CARTER, GEORGE TAYLOR, Croydon, oil-man.

IMPORTS OF CHEMICAL PRODUCTS

AT

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending January 26th.

Acetanilide —	
Holland, 3 pkgs.	F. Borden
Acetone —	
Holland, 10 pkgs.	A. & M. Zimmermann
"	T. H. Lee
Alum —	
Holland, 1 pkg.	Hedley, Rellwayer, & Co.
Arsenic —	
Germany, 20 pkgs.	G. Boer & Co.
Asbestos —	
Germany, 100	Craven & Co.
"	L. & I. D. Jt. Co.
"	Grand Fox & Co.
Barium Chloride —	
Holland, 10 pkgs.	Petri Bros.
Barytes —	
Belgium, 30 cks.	J. L. Lyon & Co.
Germany, 40	I. Krichin, Ltd.
"	Phillips & Graves
"	Sandly & Sons
"	J. L. Lyon & Co.
Bismuth Nitrate —	
Holland, 10 pkgs.	J. Barber & Co.
Cantharides —	
E. Indies, 100 c.	E. Bommard & Co.
"	Prop. Bull. Wf.
"	Hammond & Co.
"	Arnold & Harrison
"	L. & I. D. Jt. Co.
"	Hammond & Co.
"	T. H. Lee
"	S. Figgie & Co.
"	Lewis & Post
"	L. & I. D. Jt. Co.
Carminic Acid Gas —	
Holland, 20 pkgs.	Union Wren. Co.
Caster Oil —	
Belgium, 10 bks.	Farnet Bros.
"	W. G. Feltz & Co.

Caustic Potash—

Belgium, 50 c.	Petri Bros.
Holland, 100	J. M. Steel & Co.
France, 100	J. Knight & Son
Chemicals (otherwise unclassified)	
Germany, 80 pkgs.	A. & M. Zimmermann
U. States, 100	Anderson, Weber, & Smith
Portugal, £10	Dawson Bros.
Germany, 1	L. & I. D. Jt. Co.
"	Stobbs, Wilson, & Co.
Holland, 7	Phillips & Graves
Germany, 84	T. H. Lee
Belgium, 3	T. Palmer
"	T. H. Lee
"	Carey & Sons
Cream of Tartar —	
Spain, 3 pkgs.	City Com. Wf. Ltd
France, 10	F. C. Deven & Co.
"	M. Ashby, Ltd.
"	Finlay & Co.
N. Zealand, 1	Langton, Edden, & Co.
France, 12	B. & F. Wf. Co.
"	F. W. Turpin
Spain, 25	W. C. Bacon & Co.
Holland, 10	Kirkpatrick & Co.
Cresote —	
Belgium, 5 pkgs.	H. Lorenz
Cryolite —	
Denmark, 10 pkgs.	A. & M. Zimmermann
Dextrine —	
Germany, 30 pkgs.	M. D. Co.
Dyestuffs—	
Arsenic	
Cape, 10 pkgs.	L. & I. D. Jt. Co.
Cochineal	
Cameroon, 15 pkgs.	W. M. Smith & Sons
"	F. Huth & Co.
"	Marshall & French
"	Hammond & Co.
Gaish	
U. States, 10 pkgs.	Ralli Bros.

Extracts

Germany, 20 pkgs.	T. H. Lee
U. States, 50	Beresford & Co.
Belgium, 150	T. H. Lee
Austria, 500	A. J. Humphrey
Belgium, 135	L. J. Levinstein & Sons
France, 10	"
Gambier	
Belgium, 168 pkgs.	J. Greig
"	Prop. Bull. Wf.
E. Indies, 500	S. Barrow & Bro., Ltd.
"	J. Swire & Sons
"	Brown & Elmslie
"	Brinkmann & Co.
"	R. & J. Henderson
"	Beresford & Co.
Indigo	
E. Indies, 48 cts.	Darling Bros.
"	"
"	F. Huth & Co.
"	Croydale & Co.
"	R. Von Giehn & Sons
"	Park, Macfadyen, & Co.
"	Carey & Sons
"	P. & O. Co.
"	T. Barlow & Bro.
"	Ralli Bros.
"	Arbuthnot, Latham, & Co.
"	W. France & Co., Ltd.
"	G. S. N. Co.
"	H. W. Jewsbury & Co.
"	Ross & Deering
"	J. Owen
"	L. & I. D. Jt. Co.
"	E. Theodore & Co.
"	Dignall & Co.
"	J. Kenyon & Sons
"	Parsons & Keith
"	E. Bower & Co.
"	Langstaff & Co.
"	Elkan & Co.
"	Montgomery & Co.
"	F. W. Heilgers & Co.
"	G. Steinthal & Co.
"	Credit Lyonnais
"	J. Owen
Belgium, 50	F. Huth & Co.
"	"
C. America, 12	Lewis & Post

Myrabolams

E. Indies, 667 pkgs.	Darling Bros.
"	Baxter & H.
"	L. & I. D. Jt. Co.
Belgium, 1,140	W. Shal
E. Indies, 3,355	L. & I. D. Jt. Co.
"	J. O.
"	683
"	683
Orebella	
Portugal, 39 pkgs.	N. So
"	Prop. Bull.
Shumac	
France, 100 pkgs.	R. Warner & Co.
Italy, 100	A. E. Pitt
Tanner's Bark	
Adelaide, 11 L.	Baxter & H.
Belgium, 5	T. H. Lee
B.W.I., 20	Beresford & Co.
France, 2	Union L.
Belgium, 5	Arnati & Harn
N. Zealand, 12	Van der Meulen & Co.
Turmeric	
E. Indies, 54 pkgs.	H. A. Lich
"	"
"	L. & I. D. Jt. Co.
Valonia	
A. Turkey, 100 L.	A. & W. Nes
"	Hicks, Nash & Co.
Farina —	
Holland, 30 pkgs.	J. Barber & Co.
"	J. Knoll & Co.
Glucose —	
Germany, 294 pkgs.	Ohlenbach & Co.
France, 300	L. Numa
"	& Co., Ltd.
U. States, 500	Beck & Poffen
"	L. & I. D. Jt. Co.
France, 100	J. Barber & Co.
Germany, 110	"
Lead Acetate —	
Germany, 3 pkgs.	F. Dicks
Manganese Ore —	
Germany, 15 L.	1814
Japan, 150	1814
Adelaide, 10	1814

Manure—

Aden,	26 t.	Culverwell, Brooks & Co.
Germany,	25	Co-op. Lighterage Assn., Ltd.
"	5	A. J. Luke & Co.
E. Indies,	350	A. Hunter & Co.
"	400	Shorter & Co.

Methyl Alcohol—

U. States,	100 brls.	J. Kertel
------------	-----------	-----------

Mica—

E. Indies,	6584	W. M. Smith & Sons
------------	------	--------------------

Naphthaline—

Germany,	33 pkgs.	Fleming's Oil Co.
----------	----------	-------------------

Ochre—

France,	7 cks.	B. & N. Wvs Co., Ltd.
U. States,	112 brls.	Page, Son & East

Holland,	5 pkgs.	Phillipps & Graves
----------	---------	--------------------

France,	45 cks.	W. Harrison & Co.
---------	---------	-------------------

Paraffin Wax—

U. States,	2,472 brls.	Anglo-American Oil Co.
------------	-------------	------------------------

Phosphate Rock—

France,	50 t.	C. A. & H. Nichols
"	200	Lawes Manure Co., Ltd.

"	440	G. M. Bauer
---	-----	-------------

Holland,	200	Lawes Manure Co., Ltd.
----------	-----	------------------------

Plumbago—

Ceylon,	96 brls.	R. G. Hall & Co.
---------	----------	------------------

"	70	Doulton & Co.
---	----	---------------

E. Indies,	105	Marshall & French
------------	-----	-------------------

Holland,	57 cks.	B. Gallaway
----------	---------	-------------

Ceylon,	200	P. Sun Whf.
---------	-----	-------------

Norway,	60 t.	W. E. Bott & Co.
---------	-------	------------------

Ceylon,	370	J. Thredder, Son & Co.
---------	-----	------------------------

"	354	Marshall & French
---	-----	-------------------

Potash—

France,	85 c.	Petri Brs.
---------	-------	------------

"	10	F. W. Berk & Co.
---	----	------------------

Potassium Carbonate—

Holland,	381 c.	W. G. Blagden
----------	--------	---------------

France,	100	Charles & Fox
---------	-----	---------------

"	80	F. J. Putz & Co.
---	----	------------------

Germany,	90	Spies Brs. & Co.
----------	----	------------------

Holland,	90	J. Barber & Co.
----------	----	-----------------

Potassium Permanganate—

Holland,	20 pkgs.	J. Barber & Co.
----------	----------	-----------------

Potassium Sulphate—

France,	50 pkgs.	Petri Brs.
---------	----------	------------

Pumice Stone—

Italy,	2 t.	Stobbs, Wilson & Co.
--------	------	----------------------

"	6	Seaward Brs., Ltd.
---	---	--------------------

Pyrites—

Spain,	600 t.	Naylor, Benzon & Co.
--------	--------	----------------------

Rosin—

Holland,	5 brls.	Phillipps & Graves
----------	---------	--------------------

Saltpetre—

Germany,	167 cks.	P. Hecker & Co.
----------	----------	-----------------

"	42	J. Hall & Son
---	----	---------------

E. Indies,	270 bgs.	Ralli Brs.
------------	----------	------------

Germany,	4	Petri Brs.
----------	---	------------

E. Indies,	1,155	Lucas & Spencer's Wf., Ltd.
------------	-------	-----------------------------

Sodium Sulphate—

Holland,	2 pkgs.	A. Zumbek & Co.
----------	---------	-----------------

Starch—

Belgium,	60 pkgs.	F. Claydon & Co.
----------	----------	------------------

"	240	T. H. Lee
---	-----	-----------

"	100	Sawer, Sons & Co.
---	-----	-------------------

Holland,	440	Prop. Scott's Wf.
----------	-----	-------------------

"	152	G. Rahn & Co.
---	-----	---------------

Germany,	80	Phillipps & Graves
----------	----	--------------------

"	780	Horne & Co.
---	-----	-------------

France,	30	Phillipps & Graves
---------	----	--------------------

"	82	E. & T. Pink
---	----	--------------

Holland,	1,726	Little & Johnston
----------	-------	-------------------

France,	50	Prop. Chmbln.'s Wf., Ltd.
---------	----	---------------------------

Stearine—

France,	120 bgs.	Walbaum & Tosetti
---------	----------	-------------------

Belgium,	182	H. Hill & Sons
----------	-----	----------------

Holland,	68	"
----------	----	---

France,	150	Beresford & Co.
---------	-----	-----------------

Sulphur—

Italy,	3 t.	Union L. Co.
--------	------	--------------

Talc—

Italy,	628	Soundy & Sons
--------	-----	---------------

Tallow and Stearine—

Germany,	6 cks.	T. H. Lee
----------	--------	-----------

Tartaric Acid—

Holland,	8 pkgs.	F. C. Devon & Co.
----------	---------	-------------------

"	5	Kirkpatrick & Co.
---	---	-------------------

Toluol—

Holland,	11 pkgs.	J. Owen
----------	----------	---------

Turpentine—

N. Russia,	53 brls.	Chiesman & Co.
------------	----------	----------------

U. States,	3 cs.	W. J. Bush & Co.
------------	-------	------------------

"	52	C. B. Leighton
---	----	----------------

Ultramarine—

Belgium,	10 cs.	W. Harrison & Co.
----------	--------	-------------------

Germany,	2	Glaeser & Vogeler
----------	---	-------------------

France,	15 cks.	C. J. Langmead
---------	---------	----------------

Germany,	11 pkgs.	H. Brooks & Co.
----------	----------	-----------------

"	22	Steinhoff, Sons & Co.
---	----	-----------------------

"	11	Phillipps & Graves
---	----	--------------------

Varnish—

Belgium,	4 pkgs.	Leach & Co.
----------	---------	-------------

U. States,	15	Beck & Pollitzer
------------	----	------------------

France,	12	Flageolet & Co.
---------	----	-----------------

Germany,	9	L. & I. Dk. Co.
----------	---	-----------------

Verdigris—

France,	2 pkgs.	B. & F. Wf. Co.
---------	---------	-----------------

White Lead—

Holland,	10 cks.	Randall Brs.
----------	---------	--------------

"	12	Phillipps & Graves
---	----	--------------------

"	47	Spies Brs. & Co.
---	----	------------------

Wood Pulp—

Austria,	102 pkgs.	W. Friedlander & Co.
----------	-----------	----------------------

Holland,	48	Moreton Cox Brs.
----------	----	------------------

Sweden,	80	Page, Son, & East
---------	----	-------------------

Norway,	80	W. G. Taylor & Co.
---------	----	--------------------

Holland,	1,395	E. J. & W. Goldsmith
----------	-------	----------------------

"	311	W. Balchin
---	-----	------------

Norway,	68	W. D. Cork
---------	----	------------

"	360	W. E. Bott & Co.
---	-----	------------------

Zinc Oxide—

Holland,	190 brls.	M. Ashby, Ltd.
----------	-----------	----------------

"	95 cks.	J. Matton
---	---------	-----------

"	100 pkgs.	Prprs. Dowgate Dk.
---	-----------	--------------------

LIVERPOOL.

Week ending January 24th.

Acetate of Lime—

New York,	2,013 bgs.	
-----------	------------	--

Alum—

New York,	1 cs.	P. M. Inie & Co.
-----------	-------	------------------

Barytes—

Antwerp,	100 bgs.	
----------	----------	--

Rotterdam,	22 cks.	
------------	---------	--

Bone Ash—

Hamburg,	2 brls.	
----------	---------	--

Bone Meal—

Karachi,	3,000 bgs.	
----------	------------	--

Caoutchouc—

Hamburg,	77 bgs.	
----------	---------	--

Castor Oil—

Genoa,	10 cs.	
--------	--------	--

Caustic Soda—

New York,	120 dms.	J. P. Brunner & Co.
-----------	----------	---------------------

Cellulose—

Fiume,	112 bgs.	W. Friedlander
--------	----------	----------------

Chemicals (otherwise undes.)—

Philadelphia,	80 cks.	
---------------	---------	--

Hamburg,	2 cs.	
----------	-------	--

Colours—

Hamburg,	4 cs.	
----------	-------	--

Ghent,	4 brls.	J. T. Fletcher & Co.
--------	---------	----------------------

Antwerp,	1 ck.	
----------	-------	--

Cream of Tartar—

Barcelona,	5 cs.	
------------	-------	--

Tarragona,	7 cks.	3 pps.
------------	--------	--------

Dyestuffs—

Cutch		
-------	--	--

Rangoon,	798 bxs.	
----------	----------	--

Divi Divi

Hamburg	100 bgs.	
---------	----------	--

Extracts

Baltimore,	25 brls.	R. Schloesser & Sons
------------	----------	----------------------

"	50	Mucklow & Co.
---	----	---------------

"	10	
---	----	--

Bordeaux,

Fiume,	200 cks.	
--------	----------	--

"	53 brls.	De Clermont & Donner
---	----------	----------------------

Orchella

Valparaiso,	18 bls.	
-------------	---------	--

Lisbon,	8 bgs.	Edward Brs.
---------	--------	-------------

"	29	
---	----	--

Saffron

Valencia,	3 cs.	
-----------	-------	--

Sumac		
-------	--	--

Barcelona,	100 bgs.	
------------	----------	--

Palermo,	100	
----------	-----	--

Farina—

Fiume,	490 bls.	
--------	----------	--

Rotterdam,	100 bgs.	
------------	----------	--

Glucose—

New York,	125 brls.	W. P. Sinclair & Co.
-----------	-----------	----------------------

Hamburg,	4 cks.	
----------	--------	--

New York,	1,075 brls.	
-----------	-------------	--

Iodine—

Valparaiso,	43 brls.	A. Gibbs & Son
-------------	----------	----------------

Mica—

New York,	10 brls.	
-----------	----------	--

Carthage,	51 t.	
-----------	-------	--

Paraffin Wax—

Philadelphia,	218 brls.	
---------------	-----------	--

Phosphate—

Ghent,	250 bgs.	
--------	----------	--

Antwerp,	500	
----------	-----	--

Phosphorus—

Norfolk,	1 cs.	J. Barnett & Co.
----------	-------	------------------

Potash—

Dunkirk,	1 ck.	
----------	-------	--

Potassium Carbonate—

Hamburg,	19 cks.	
----------	---------	--

Pumice Stone—

Messina,	90 bgs.	
----------	---------	--

Pyrites—

Huelva,	1,609 t.	Matheson & Co.
---------	----------	----------------

Rosin—

New York,	500 brls.	
-----------	-----------	--

Saltpetre—

Hamburg,	200 brls.	8 cks. 130 kgs.
----------	-----------	-----------------

Soap—

New York,	32 cs.	
-----------	--------	--

Philadelphia,	5 pkgs.	R. Cooks & Ayerton & Saunders
---------------	---------	-------------------------------

Boston,	1,199	2 bxs. 3 cs. W. Edwards & Son
---------	-------	-------------------------------

Colours— Antwerp, 1 ck. Bailey & Leatham Danzig, 10 Wilson, Sons, & Co., Ltd. Rotterdam, 6 W. & C. L. Ringrose Hamburg, 20 3 cks. 1 cs. Hatchinson & Son 7 cks. 3 cs. G. Malcolm & Son Oryolite— Copenhagen, 3 cks. Wilson, Sons, & Co., Ltd. Dextrine— Sontin, 125 bgs. Wilson, Sons, & Co., Ltd. Dyestuffs— Alizarine Rotterdam, 18 brls. Hutchinson & Son 30 pkgs. W. & C. L. Ringrose Logwood Hamburg, 20 bls. Wilson, Sons, & Co., Ltd. Madder Rotterdam, 2 cks. Hutchinson & Son Sumac Trieste, 5 bgs. Wilson, Sons, & Co., Ltd. Palermo, 577 250 Yarnish Trieste, 66 bgs. Wilson, Sons, & Co., Ltd. Dyestuffs (otherwise undescribed) Hamburg, 5 cks. Bailey & Leatham Farina— Sontin, 100 bgs. Wilson, Sons, & Co., Ltd. Ghent, 154 Hamburg, 100 Glucose— Rotterdam, 80 bgs. Hutchinson & Son Manganese Oxide— Rotterdam, 1 brl. Hutchinson & Son Manure— Ghent, 180 t. 600 bgs. Wilson, Sons, & Co., Ltd. Ochre— Rouen, 25 cks. Pitch— Hamburg, 1 ck. H. F. Padsey Potash— Antwerp, 20 dms. Bailey & Leatham Pumice Stone— Messina, 34 pkgs. Wilson, Sons, & Co., Ltd. Rosin Oil— Hamburg, 1 cs. Bailey & Leatham Soap— Bari, 37 cs. Wilson, Sons, & Co., Ltd. Rotterdam, 34 J. Hutchinson & Son Soda— Rotterdam, 1 brl. 4 cks. Hutchinson & Son Sodium Nitrate— Hamburg, 150 bgs. Wilson, Sons, & Co., Ltd. Search— Amsterdam, 48 cs. W. & C. L. Ringrose Bremen, 1,176 Velmann & Co.	Stearine— Amsterdam, 125 bgs. Wilson, Sons, & Co., Ltd. Sulphur— Catania, 672 pkgs. Wilson, Sons, & Co., Ltd. Tartaric Acid— Rotterdam, 2 cks. W. & C. L. Ringrose " 1 Hutchinson & Son Ultramarine— Rotterdam, 17 cks. Hutchinson & Son " 4 W. & C. L. Ringrose White Lead— Antwerp, 22 cks. Bailey & Leatham Rotterdam, 47 Hutchinson & Son Ghent, 20 Wilson, Sons, & Co., Ltd. Rotterdam, 51 W. & C. L. Ringrose Wood Pulp— Hango, 46 bls. Farley & Co. " 67	Sumac Palermo, 550 bgs. Wm. Bunten & Co. 717 60 bls. Farina— Antwerp, 20 bgs. Glucose— New York, 50 brls. 2 dms. Lead Acetate— Rotterdam, 26 cks. J. Rankine & Son Ochre— Norfolk, 294 brls. W. H. Alexander & Co. Paint— New York, 3 brls. Painters' Colours— Antwerp, 7 cks. Paraffin Wax— New York, 638 brls. Phosphates— Ghent, 1,000 bgs. Pitch— Antwerp, 8 cks. Rosin— New York, 1,030 brls. Saltpetre— Calcutta, 434 bgs. Soap— Norfolk, Va., 70 brls. Wm. T. Geddes Baltimore, 100 Fiume, 27 cs. Wm. Bunten & Co. Starch— Fiume, 52 Antwerp, 100 cs. Stearine— Amsterdam, 62 bgs. Sulphur— Catania, 3,671 bgs. Fiume, 195 Tallow— New York, 50 tcs. Tar— New York, 60 brls. Tartar— Bordeaux, 24 cks. Tartaric Acid— Messina, 2 cks. Fiume, 2 Wright, Dick, & Co. Treacle— New York, 200 brls. Ultramarine— Rotterdam, 1 ck. J. Rankine & Son Yarnish— New York, 2 brls. 2 hf. brls. White Lead— Antwerp, 2 cks. Rotterdam, 18 J. Rankine & Son Ghent, 2 Rotterdam, 60 Wood Pulp— Rostock, 3,500 bls. Dronheim, 32 Halifax, N.S., 2,000 blls. Figue, 222 Christiania, 680 Zinc Oxide— Antwerp, 25 cks.	Colours— Antwerp, 2 cks. Tyne S. S. Co. Glucose— New York, 199 brls. Furness, Withy, & Co. Plumbago— Antwerp, 3 bgs. Tyne S. S. Co. Pyrites— Huelva, 3,419 t. Scott Bros. Salt— St. Ubes, 900 t. Starch— Antwerp, 40 cs. Tyne S. S. Co. Rotterdam, 178 Yarnish— New York, 1 cs. 1 brl. Furness, Withy, & Co. Wood Pulp— Christiania, 60 bls. 10 cs. Zinc Oxide— Rotterdam, 25 cks. Tyne S. S. Co.
--	--	--	--

GLASGOW.
Week ending January 31st.

Acetic Acid—
 Antwerp, 1 ck.
Alum—
 New York, 1 bx.
Aniline—
 Rotterdam, 35 brls. 8 bxs. 2 cs. J. Rankine & Son
Aniline Salt—
 Rotterdam, 15 cks.
Barytes—
 Rotterdam, 23 cks. J. Rankine & Son
Barytes Sulphate—
 Antwerp, 400 bgs. 44 cks.
Boracic Acid—
 Leghorn, 82 cks.
Castor Oil—
 Antwerp, 118 cks.
 Calcutta, 150 dms. 350 cs.
Chemicals (otherwise undescribed)
 Rotterdam, 1 cs.
Colours—
 Antwerp, 6 cks.
 Rotterdam, 4 1 cs. J. Rankine & Son
 8 pkgs.
Cottonseed Oil—
 New York, 20 brls.
 Rotterdam, 30
Cream of Tartar—
 Barcelona, 5 brls. Arthur & Hinshaw
 " 3 Smith & Sharp
 " 3 Waddell & Beyson
Dyestuffs—
 Alizarine
 Rotterdam, 10 brls. J. Rankine & Son
 46 pkgs.
 Argols
 Bordeaux, 63 cks.
 Extracts
 Antwerp, 5 cks.
 New York, 10 brls.
 Baltimore, 50
 Fiume, 667
 Logwood
 Jamaica, 495 t. Wm. Corral & Co.

TYNE.
Week ending January 26th.

Carbonic Acid Gas—
 Rotterdam, 50 tubes. Tyne S. S. Co.

GOOLE.
Week ending January 23rd.

Alkali—
 Calais, 9 cks.
Alum—
 Rotterdam, 48 bgs.
Aniline Colours—
 Hamburg, 1 cs.
Aniline Oil—
 Rotterdam, 6 pkgs.
Antimony—
 Boulogne, 5 cs.
Caoutchouc—
 Boulogne, 6 cks.
Dyestuffs—
 Alizarine
 Rotterdam, 28 pkgs.
 Extracts
 Ghent, 115 cks.
 Logwood
 Belle, 516 t.
Dyestuffs (otherwise undescribed)
 Boulogne, 3 cs. 5 cks.
 Rotterdam, 2 253 pkgs.
Potash—
 Calais, 22 dms.
Saltpetre—
 Rotterdam, 200 bgs.
 Hamburg, 11 bgs.
Soda—
 Rotterdam, 12 cks.
Starch—
 Rotterdam, 23 cs.
Sulphur Ore—
 Seville, 1,245 t.
Yarnish—
 Boulogne, 2 cks.

GRIMSBY.
Week ending January 26th.

Aniline Dyes—
 Antwerp, 38 pkgs. 2 cs.
 Hamburg, 41
Caoutchouc—
 Hamburg, 5 cs.
Chemicals (otherwise undescribed)
 Hamburg, 21 cks. 8 cs.
Colours—
 Hamburg, 3 cks.
 Antwerp, 4 26 cs. 33 pkgs.
Dyestuffs (otherwise undescribed)
 Dieppe, 4 cks.
Farina—
 Hamburg, 175 bgs.
Starch—
 Antwerp, 90 cs.

EXPORTS OF CHEMICAL PRODUCTS
OF
THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.		Melbourne, 3 c.	£14	St. Petersburg, 10 l.	£30	Ammonium Sulphate—	
<i>Week ending January 30th.</i>		Wellington, 6	10	Sydney, 15 c.	£30	Ghent, 45 l.	£40
Acids—		Ammonia—	£3	Ammonium Chloride—		Hamburg, 40 g.	£30
<i>Nitric.</i>	11 c.	Havana, 7 c.	£3	Adelaide, 1 c.	£13	Osaka, 50	2 c.
<i>Sulphuric.</i>	11 c.	Sydney, 2 l.	4	Pinaro, 1 l.	12 c.		
		Yokohama, 4	30	Rotterdam, 2 l.	12 c.	Soracic Acid—	
Alkalis—		Ammonium Carbonate—	£30	Philadelphia, 5	14	Adelaide, 1 l.	£10
<i>Soda Chloride.</i>	1 c.	New York, 15 l.	7 c.			Sydney, 20 c.	

Borax—

Hamburg,	5 cks.	£36
E. London,	50 kgs.	£110
Algoa Bay,	20 cs.	12
Natal,	10 c.	40
Delagoa Bay,	40	40
Hamburg,	5 cks.	40
Malta,	1 t.	26
Batoum,	1	21

Borax Crystals—

Adelaide,	1 t.	£20
-----------	------	-----

Calcium Chloride—

Melbourne,	10 t.	3 c.	£60
------------	-------	------	-----

Caustic Soda—

Algoa Bay,	2 t.	16 c.	£69
E. London,	10	7	77
Lyttelton,	10	7	7
Hong Kong,	11	30	
Wellington,			

Chemicals (otherwise undes.)—

Algoa Bay,	1 t.	3 c.	£160
Bombay,	9 cks.	52	
New York,	6	13	
Cape Town,	18	45	
Lisbon,	10	17	
Delagoa Bay,	8 cs.	1 ck.	32
Hong Kong,	2	3 cks.	21
Wellington,	2	2	11
Natal,	7	24	
Jamaica,	26 pkgs.	54	
Melbourne,	5 cs.	7	89
Adelaide, 35 brls.	20	43	
Madras,	4 cks.	75	

Citric Acid—

Libau,	10 cks.	£298
Melbourne,	2 t.	246
Cape Town,	2 c.	13
Natal,	1 cs.	7
Bombay,	6	34
Danzig,	10	65
Antwerp,	4 cks.	120
Hamburg,	1	5
Genoa,	10	63

Coal Products—

Alizarine		
New York,	25 cks.	£311
Aniline Dyes		
Calcutta,	2 cs.	£93
Sydney,	4	12
Melbourne,	1	20
Tientsin,	55	375
Aniline Oil		
New York,	12 drs.	£300
Ghent,	8 cks.	75
Aniline Salts		
New York,	61 cks.	£325
Anthracene		
Dusseldorf,	195 cks.	£1,800
Benzol		
Rotterdam,	44 puns.	£264
Carbolic Acid		
Calais,	104 cks.	£215
Penang,	25 drs.	10
Sydney,	30 dms.	27
Hiogo,	170 pkgs.	380
Coal Tar Dyes		
Timaru,	4 cs.	£24
Creosote		
New York,	400 brls.	£185
Naphtha		
Melbourne,	13 cs. 10 crates	£31
Naphthaline		
Melbourne,	5 cks.	£12
Hamburg,	11	10
Pitch		
Nantes,	202 t.	£425
Dunkirk,	246	436
New York,	544 bgs.	107
Newport News,	500	170
Antwerp,	608	1,051
Leghorn,	1,645	3,300
Boston,	150 cks. 2,105 bgs.	442
Tar		
Wellington,	23 pkgs.	£6
Boston,	10 cks.	6
Algoa Bay,	175 drs.	95
Natal,	270	43
Santos,	25 runs.	15
Trinidad,	10 rns.	7

Coal Products (otherwise undes.)—

Sydney,	140 brls.	£148
Adelaide,	5 drs.	6

Copperas—

Auckland,	17 t.	6 c.	£30
Constantinople,	10	19	27

Copper Sulphate—

Sydney,	5 t.	£73
Treport,	5	80
Hobart,	2	38
Algoa Bay,	9	90
Melbourne,	6	90
Gibraltar,	1	18

Cream of Tartar—

Hamilton,	11 c.	£38
Auckland,	10	32
Napier,	4	13
Sydney,	1 t.	64
Adelaide,	1	66
Melbourne,	2	133
Wellington,	2	131

Cyanide—

Delagoa Bay,	8 cs.	£136
--------------	-------	------

Disinfectants—

Singapore,	47 dms.	£34
Hamburg,	13 cks.	55
Antigua,	18 drs.	6 cs. 23
Calcutta,	30 cks 45 dms.	107
Algoa Bay,	7 t.	250
Cape Town,	2	200
Adelaide,	2	21
Rio de Janeiro,	5	14
Madras,	1	10 c.
Hamburg,	62 cks.	161
Singapore,	100 drs.	35
Bombay,	4 kgs	26
Melbourne,	60 drs.	3
Sydney,	16	71

Guanine—

Barfleur,	90 t.	7 c.	£960
Penang,	14	5	142

Hydrochloric Acid—

Huelva,	11 c.	£13
---------	-------	-----

Hypophosphite of Lime—

Oporto,	1 c.	£13
---------	------	-----

Manure—

Jersey,	5 t.	£40
Penang,	5	11 c.
Mauritius,	22	7
Genoa,	98	10
Hamburg,	1	9
Genoa,	268	10
Bordeaux,	46	5
Demerara,	100	1,100
Malaga,	5	45
Cape Town,	204	2

Nitric Acid—

Auckland,	6 c.	£10
Huelva,	7	13
Sydney,	5 cs.	7
Jersey,	40 carboys	60
Shanghai,	2 c.	7

Oxygen—

Amsterdam,	1 cs.	£30
------------	-------	-----

Phosphate—

Antwerp,	10 t.	£20
Jamaica,	50	125

Potash—

Hong Kong,	3 c	£5
------------	-----	----

Potash Crystals—

Brussels,	1 cs.	£18
Halifax,	3	10 cks.

Potassium Bichromate—

Sydney,	1 t.	£43
Hiogo,	1	10 c

Potassium Cyanide—

Cleveland Bay,	20 cs.	£222
Natal,	2 c.	12

Potassium Iodide—

Melbourne,	1 cs.	£18
Shanghai,	1	26

Potassium Prussiate—

Calcutta,	13 c.	£22
Sydney,	5	22

Salt Cake—

Sydney,	3 t.	19 c.	£10
---------	------	-------	-----

Saltpetre—

Oporto,	1 t.	17 c.	£39
Algoa Bay,	10	13	
Pernambuco,	18	13	464
Bahia,	4	9	106
Rio de Janeiro,	34	8	807
Natal,	15	17	
Melbourne,	2	47	
Oporto,	4	1	85
Rio de Janeiro,	4	18	122
Sydney,	1	23	

Sheep Dip—

E. London,	100 dms.	£20
Calcutta,		4 cks. 20
Lyttelton,	1 t. 6 c.	20 14

Slag—

Dunedin,	50 t.	£125
Lyttelton,	50	125

Soda Salts—

New York,	7 t.	9 c.	£135
-----------	------	------	------

Sodium Bicarbonate—

Adelaide,	4 t.	£27
E. London,	1	3 c.

Sodium Carbonate—

Algoa Bay,	10 c.	18
------------	-------	----

Sodium Hypophosphite—

Oporto,	1 c.	£6
---------	------	----

Sodium Sulphate—

Adelaide,	26 t.	16 c.	£130
New York,	2	10	17

Sulphur—

E. London,	15 kgs. 25 cks.	£30
Algoa Bay,	100	18 cs.
Pernambuco,	40	59
		19

Sulphur Dioxide—

New York,	9 cs.	£26
-----------	-------	-----

Sulphuric Acid—

Algoa Bay,	5 t.	5 c.	£21
Colombo,	1	10	13

Superphosphate—

Barfleur,	4 t.	18 c.	£14
Cherbourg,	43	16	199
Mauritius,	331	6	979
Barbadoes,	100		300

Tartaric Acid—

Sydney,	2 t.	£203
B. Ayres,	10 c.	46
Hamburg,	10	49
Melbourne,	5	28
Napier,	3	14
Algoa Bay,	3	17

LIVERPOOL.

Week ending January 30th.

Acid—

N. Orleans,	2 c.	£22
-------------	------	-----

Albumen—

Boston,	9 c.	2 q.	£82
---------	------	------	-----

Alum—

Larnaca,	1 t.	6 c.	£6
B. Ayres,	5	7	1 q.
Patras,	1	9	3
Piraeus,	1	12	2
Candia,	2	7	3
Havana,	4	15	1
Palermo,	1		15
Hanli,	2	10	17
San Francisco,	59	12	2
Bombay,	14	7	1
Smyrna,	7	1	38

Aluminous Cake—

Portland, M.,	10 t.	8 c.	3 q.	£40
Calcutta,	25	10	3	83

Ammonia Salts—

Antwerp,	7 c.	1 q.	£6
----------	------	------	----

Ammonium Chloride—

Gothenburg,	5 c.	£9
Smyrna,	2 t.	75
Genoa,	1	16
Trieste,	1	17
Bombay,	3	17
Alexandria,	15	15 brls.
Calcutta,	5	188

Ammonium Sulphate—

Genoa,	10 t.	6 c.	2 q.	£120
Venice,	30			370
Nantes,	79	12		917
Newport News,	51			588
Las Palmas,	20			224
Philadelphia,	25	10	2	204
Boston,	103	12	3	1,189
Valencia,	80	19		947

Antimony—

Pernambuco,	2 cks.	
-------------	--------	--

Arsenic—

San Francisco,	10 cks.	£30
----------------	---------	-----

Asbestos—

Bombay,	2 trs.	
Shanghai,	1 cs.	

Barytes—

Lisbon,	10 brls.	
---------	----------	--

Bleaching Powder—

Alexandria,	8 cks.	
Baltimore,	61	
Bombay,	8	5 kgs.
Boston,	834	
B. Ayres,	67	50 brls.
Genoa,	43	
Nantes,	31	
New York,	209	30 bxs.
Rotterdam,	10	
Santander,	11	
Stettin,	71	
Antwerp,	21	
Philadelphia,	91	

Boracic Acid—

Portland, M.,	15 c.	2 q.	£25
---------------	-------	------	-----

Borax—

Hamburg,	1 t.	£20
Antwerp,	14 c.	20
Sagua la Grande,	10	2 q.
Gundalajara,	9	9

Constantinople,	1	1	21
Bilbao,	5	2	103
Yokohama,	3	9	72
Cienfuegos,		9	10
Rotterdam,	4	10	113

Calcium Chloride—

Melbourne,	5 t.	3 c.	£12
Sydney,	10	4	24
Odessa,	10		23

Caoutchouc—

New York,	1 pkge	
Vera Cruz,	1 cs.	
Piraeus,	1	

Carbolic Acid—

Hamburg,	10 t.	11 c.	£521
New York,		7 cks.	61
Boston,		10 cs. 30 brls.	67
Newport News,		37 cks.	244
Rotterdam,			238

Caustic Potash—

||
||
||

[illegible]

Case 1, 1871-1872	24 1/2	10 1/2
Case 2, 1873-1874	24	10 1/2
Case 3, 1875-1876	24	10 1/2
Case 4, 1877-1878	24	10 1/2
Case 5, 1879-1880	24	10 1/2
Case 6, 1881-1882	24	10 1/2
Case 7, 1883-1884	24	10 1/2
Case 8, 1885-1886	24	10 1/2
Case 9, 1887-1888	24	10 1/2
Case 10, 1889-1890	24	10 1/2
Case 11, 1891-1892	24	10 1/2
Case 12, 1893-1894	24	10 1/2
Case 13, 1895-1896	24	10 1/2
Case 14, 1897-1898	24	10 1/2
Case 15, 1899-1900	24	10 1/2
Case 16, 1901-1902	24	10 1/2
Case 17, 1903-1904	24	10 1/2
Case 18, 1905-1906	24	10 1/2
Case 19, 1907-1908	24	10 1/2
Case 20, 1909-1910	24	10 1/2
Case 21, 1911-1912	24	10 1/2
Case 22, 1913-1914	24	10 1/2
Case 23, 1915-1916	24	10 1/2
Case 24, 1917-1918	24	10 1/2
Case 25, 1919-1920	24	10 1/2
Case 26, 1921-1922	24	10 1/2
Case 27, 1923-1924	24	10 1/2
Case 28, 1925-1926	24	10 1/2
Case 29, 1927-1928	24	10 1/2
Case 30, 1929-1930	24	10 1/2
Case 31, 1931-1932	24	10 1/2
Case 32, 1933-1934	24	10 1/2
Case 33, 1935-1936	24	10 1/2
Case 34, 1937-1938	24	10 1/2
Case 35, 1939-1940	24	10 1/2
Case 36, 1941-1942	24	10 1/2
Case 37, 1943-1944	24	10 1/2
Case 38, 1945-1946	24	10 1/2
Case 39, 1947-1948	24	10 1/2
Case 40, 1949-1950	24	10 1/2
Case 41, 1951-1952	24	10 1/2
Case 42, 1953-1954	24	10 1/2
Case 43, 1955-1956	24	10 1/2
Case 44, 1957-1958	24	10 1/2
Case 45, 1959-1960	24	10 1/2
Case 46, 1961-1962	24	10 1/2
Case 47, 1963-1964	24	10 1/2
Case 48, 1965-1966	24	10 1/2
Case 49, 1967-1968	24	10 1/2
Case 50, 1969-1970	24	10 1/2
Case 51, 1971-1972	24	10 1/2
Case 52, 1973-1974	24	10 1/2
Case 53, 1975-1976	24	10 1/2
Case 54, 1977-1978	24	10 1/2
Case 55, 1979-1980	24	10 1/2
Case 56, 1981-1982	24	10 1/2
Case 57, 1983-1984	24	10 1/2
Case 58, 1985-1986	24	10 1/2
Case 59, 1987-1988	24	10 1/2
Case 60, 1989-1990	24	10 1/2
Case 61, 1991-1992	24	10 1/2
Case 62, 1993-1994	24	10 1/2
Case 63, 1995-1996	24	10 1/2
Case 64, 1997-1998	24	10 1/2
Case 65, 1999-2000	24	10 1/2
Case 66, 2001-2002	24	10 1/2
Case 67, 2003-2004	24	10 1/2
Case 68, 2005-2006	24	10 1/2
Case 69, 2007-2008	24	10 1/2
Case 70, 2009-2010	24	10 1/2
Case 71, 2011-2012	24	10 1/2
Case 72, 2013-2014	24	10 1/2
Case 73, 2015-2016	24	10 1/2
Case 74, 2017-2018	24	10 1/2
Case 75, 2019-2020	24	10 1/2
Case 76, 2021-2022	24	10 1/2
Case 77, 2023-2024	24	10 1/2
Case 78, 2025-2026	24	10 1/2
Case 79, 2027-2028	24	10 1/2
Case 80, 2029-2030	24	10 1/2
Case 81, 2031-2032	24	10 1/2
Case 82, 2033-2034	24	10 1/2
Case 83, 2035-2036	24	10 1/2
Case 84, 2037-2038	24	10 1/2
Case 85, 2039-2040	24	10 1/2
Case 86, 2041-2042	24	10 1/2
Case 87, 2043-2044	24	10 1/2
Case 88, 2045-2046	24	10 1/2
Case 89, 2047-2048	24	10 1/2
Case 90, 2049-2050	24	10 1/2
Case 91, 2051-2052	24	10 1/2
Case 92, 2053-2054	24	10 1/2
Case 93, 2055-2056	24	10 1/2
Case 94, 2057-2058	24	10 1/2
Case 95, 2059-2060	24	10 1/2
Case 96, 2061-2062	24	10 1/2
Case 97, 2063-2064	24	10 1/2
Case 98, 2065-2066	24	10 1/2
Case 99, 2067-2068	24	10 1/2
Case 100, 2069-2070	24	10 1/2

[illegible]

Yokohama,		44 cks.	
Barcelona,		20	
Carthagena. Sp.,			6
Genoa,			
Hamburg,		70	
Havana,		3	
Leghona,		3	
Lisbon,		27	
Madras,	1:0 kgs.		
M. Video,			25
Portland, Or.,		29	
Victoria, B. C.,		25	
Soda Crystals—			
Bombay,	60 kgs.		
Boston,	280 brls.		
Gibraltar,	30		
N. Orleans,	134		
Oporto,	20		
San Francisco,	250		
Talcabano,	15		
Malta,	25		
Penang,		10 cks.	
Philadelphia,	250		
Sodium Arseniate—			
New York,	10 cks.		
Sodium Borate—			
Antwerp,	5 cks.		
Sodium Bicarbonate—			
Adelaide,	110 kgs.		
Bombay,	60		
Bourgas,		50 kgs.	30 1/2
Calcutta,	125		
Constantinople,		1 ck.	
Danzig,	25		
Hong,	1,400		
La Libertad,		10	
Melbourne,	540		
M. Video,	60		
Nantes,	30	4	20
Napies,	20		
New York,		20	10
Odesa,	10		
Salvica,	10		
San Francisco,	200		
Spirey,	440		
Trieste,	30		
Yokohama,	2,750	5 1/2	
Algon Bay,	60	20	4
Mayaguez,	2 cks.		
Passage,			10
P. Elizabeth,		9	
Ragnoe,	5		
Savannah,		13	
Washington,		20	19
Sodium Chlorate—			
Antwerp,	50 kgs.		
New York,	300		
Rivierum,	70		
Hamburg,	140		
Sodium Hyposulphite—			
Bombay,	4 cks.		
Sodium Oxide—			
New York,	3 cks.		
Sodium Silicate—			
Madeira,	6 brls.		
Sodium Sulphate—			
Rochay,	50 cks.		
Sulphur—			
Maracham,		5 c.	
Bacon,	215 L.	5	
Sulphuric Acid—			
Mexico,	1 L.	1 c.	
Superphosphate—			
Las Palmas,	5 L.		
Palmayo,	10		
Nantes,	58	19 c.	
Valencia,	20		
Venice,	5,067		
Tartric Acid—			
Mayaguez,		1 c.	2 q 4
Pooze,		1	
Treacle—			
Amsterdam,	21 brls.		
Bombay,		2 cks.	
Genet,		12 hf. gns.	
Antwerp,	10	20	
Hamburg,		10 lbs.	
Terrearen,	40 hf. brls.	8 cks.	
Turpentine—			
Palermo,	1 L.	11 c.	
Guayaquil,	26 dms.		
Mexico,	2		
Varnish—			
Demerara,	5 brls.		
F. London,		1 cks.	
Madrid,		1	5 dms.
Madras,		5	
Manila,		6	
Maranham,			2
San Sebastian,		1	
Algon Bay,		2	
Boma,	10		

ig—
nd, O., 100 brls.
hai, 10 cs
chloride—
ay, 21 t. 17 c. 1 q. £216
ulphide—
nd, Me., 2 dms

MANCHESTER.

Week ending January 31st.

nia— 15 brls.
s, 2 cs.
nium Carbonate—
rt, 7 cks.
e Oil—
erp, 22 dms.
l—
urg, 3 cks.
ndam, 29 dms.
lic Acid
l, 190 brls.
e Soda—
ut, 25 dms.
cals (otherwise undescribed)
ay, 1 cs. 20 cks.
ibo, 1.
hagen, 10 kgs.
ras—
ca, 30 brls.
ote—
rdam, 18 cks.
uffs (otherwise undescribed)
l, 9 cks.
erp, 16 cks.
e Acid—
e Janeiro, 3 cks.
in Wax—
lona, 60 bgs.
irk, 285 t.
alum—
as, 4 cs.
moniac—
ndria, 5 brls.

l, 6 cs.
160 bss.
Ash—
e Janeiro, 3 cks.
m Blarseniate—
n, 1 ck.
m Sulphate—
ay, 110 bgs.
ort, 11 cks.
il—
ort, 2 dms.
entine—
as, 1 cs.
Chloride—
rdam, 1 ck.

HULL.

Week ending January 26th.

onium Sulphate—
irk, 500 bgs.
it, 259
burg, 1,000
rdam, 485
shing Powder—
u, 5 cks.
t—
enburg, 2 cs.
icals (otherwise undescribed)
terdam, 200 cks. 20 pkgs.
erp, 24 cs.
ten, 2
stania, 29 1,442 slbs.
enhagen, 8
enburg, 6
sburg, 3 175
terdam, 3 50
sl, 2
lin, 7 12 pkgs.
onseed Oil—
erp, 641 c.
stania, 205

Gothenburg, 100 c.
Hamburg, 1,241
Konigsberg, 445
Rotterdam, 2,273
Stettin, 51
Dyestuffs (otherwise undescribed)
Christiania, 30 bgs.
Libau, 1 ck.
Reval, 3 cs.

Linseed Oil—

Alexandria, 23 c.
Antwerp, 100
Aalesund, 7
Bergen, 95
Bremen, 6
Christiansand, 21
Christiansund, 42
Christiania, 119
Hamburg, 52
New York, 177
Rotterdam, 100

Manure—

Dunkirk, 25 bgs. 6 bls.
Painters' Colours—
Amsterdam, 3 cks.
Antwerp, 39
Bergen, 2 45 pks.
Christiania, 13 2 dms.
Ghent, 24
Libau, 1 cs.
New York, 100
Odessa, 80
Rotterdam, 12
Reval, 6
Stavanger, 1

Paraffin Wax—

Libau, 200 bgs.

Pitch—

Antwerp, 184 t.
Stettin, 10

Soap—

Christiania, 1 cs.

Tallow—

Bremen, 8 cks.

Tar—

Amsterdam, 10 cks.
Antwerp, 1

Treacle—

Drontheim, 25 cks.

Varnish—

Christiania, 1 cs.
Gothenburg, 5 1 dm.

GLASGOW.

Week ending January 31st.

Acids—
U.S.A., 13 t. 2 c. £170
Bombay, 1 t. 2½ c.
Ammonium Carbonate—
India, 1 t. 2½ c.
Ammonium Sulphate—
Baltimore, 94 t. 2 c.
Jersey, 40 6
U.S.A., 51
Hamburg, 50 14
Bleaching Powder—
Bombay, 3 t. 3½ c.
Calcutta, 85, 4
India, 2 5
Boiler Composition—
Calcutta, 3 t. 16 c.

Borax—

Antwerp, 1.

China Clay—

St. Etienne, 10 c.

Coal Products—

Pitch
St. John's, N.B., 14 t. 19 c.
Talcabuan, 26 13
U.S.A., 34 cks.
Amsterdam, 140
Antwerp, 764 2½
Danzig, 53 12
Aalesund, 710
Havre, 510 17

Tar—

Bombay, 262 rmlts. £174
Calcutta, 21
Madras, 12 12 brls.
Mauritius, 52 cks. 300
U.S.A., 200
Danzig, 200
Bordeaux, 1,444 t. 8 c.
India, 250
Java, 100
Singapore, { 200 rmlts. 250
200 cks.

Tar Oil

Danzig, 50 brls. £40
Angers,

Copperas—

Bombay, 14 t. 6¾ c.

Dyestuffs—

Extract
Danzig, 3 t. 15¾ c.

Logwood

Paris, 5 t. ¾ c.

Glucose—

Pt. Elizabeth, 7 t.

Guano—

Deli, 75 t.

Iodine—

Rotterdam, 16¾ c.

Lead Acetate—

Bombay, 9 t. 6 c.
Calcutta, 3 16

Linseed Oil—

Bombay, 6 t. 3 c. £50
Cape Town, 13 2½
Montreal, 1 5½
Trinidad, 1 7¾
Singapore, 1 7¾

Litharge—

Bombay, 5 t. 14½ c.

Manganese—

U.S.A., 10 t.
Basle, 5 18½ c.

Manure—

Jersey, 261 t. 5 c.
Calcutta, 10

Paint—

Calcutta, 5 t. 7½ c.

Painters' Colours—

Bombay, £154
U.S.A., 142
Rotterdam, 50
Calcutta, £279 125.

Paraffin Wax—

Bordeaux, 8 t. 7½ c.
Reval, 5 1¾
King Wm.'s Town, 2 9¾
Antwerp, 1 4
Bilbao, 5 12½
Nantes, 7¾

Potash Salts—

Savannah, 3 t. 3 c.

Potassium Bichromate—

Montreal, 6 t. 3 c.
U.S.A., 32 10
Bombay, 7 17¾

Rosin—

Calcutta, 12 t. 19 c.
India, 5 1

Soap—

Grenada, 5 t. 7 c.
E. London, 3 15

Soda Ash—

U.S.A., 25 t.

Sodium Bichromate—

Calcutta, 19¾ c.
Bombay, 4 t. 13¾

Sulphur—

Iquique, 5 t. 4 c.

Tallow—

Christiania, 8 c.

Treacle—

Christiania, 26 t. 10 c.

Varnish—

Calcutta, 150 gls.

White Lead—

Kingston, 2 t. 14½ c.
Calcutta, 3
Cape Town, 1 10
Antwerp, 1 5

TYNE.

Week ending January 26th.

Alkali—
Amsterdam, 43 t. 11 c.
New York, 219 11
Gothenburg, 5 18
Rotterdam, 15 1

Alum Earth—

Antwerp, 5 t. 8 c.

Ammonia—

Genoa, 60 t. 11 c.

Ammonium Carbonate—

Nykjobing, 5 c.

Antimony—

New York, 60 t.

Barium—

New York, 2 t.

Bleaching Powder—

Amsterdam, 27 t. 7 c.
Genoa, 9 17

New York, 125 t. 5 c.
Antwerp, 40 5
Gothenburg, 10 3
Aarhus, 10 2
Copenhagen, 35 5
Rotterdam, 7 16
Drontheim, 10 3

Caustic Soda—

Amsterdam, 2 t. 10 c.

Genoa, 51 4

Bilbao, 15 11

New York, 102 12

Antwerp, 16 7

Hamburg, 2

Gothenburg, 2 18

Rotterdam, 4 16

Farina—

Bergen, 2,240 bls.

Fluorspar—

New York, 22 t. 2 c.

Litharge—

Amsterdam, 3 t. 17 c.

New York, 13 12

Gothenburg, 1 8

Dunkirk, 1 10

Magnesia—

Genoa, 15 c.

New York, 1 t. 11

Antwerp, 1 2 q.

Manure—

Aarhus, 14 t. 14 c.

Bordeaux, 14 14

Paint—

New York, 3 t.

Antwerp, 8 c.

Hamburg, 6

Copenhagen, 1 15

Rotterdam, 19

Saltcake—

New York, 41 t. 5 c.

Soda—

Genoa, 5 t.

Antwerp, 5 6 c.

Nykjobing, 10

Rotterdam, 2 19

Soda Ash—

Gothenburg, 60 t. 11 c.

Sodium Sulphate—

Moss, 225 t. 14 c.

White Lead—

New York, 10 t.

GOOLE.

Week ending January 23rd.

Benzol—

Rotterdam, 72 cks.

Chemicals (otherwise undescribed)

Boulogne, 16 dms.

Ghent, 29 cks. 20 pkgs.

Hamburg, 57

Rotterdam, 50

Coal Products (otherwise undes.)—

Boulogne, 1 ck. 5 tins.

Ghent, 3

Rotterdam, 141

Dyestuffs (otherwise undescribed)

Ghent, 1 ck.

Hamburg, 4

Manure—

Boulogne, 66 bgs.

Bruges, 1,127

Ghent, 707

Painters' Colours—

Rotterdam, 1 ck.

Pitch—

Antwerp, 465 t.

Dunkirk, 549

GRIMSBY.

Week ending January 26th.

Caoutchouc—

Santo Domingo, 2 pkgs.

Chemicals (otherwise undescribed)

Antwerp, 1 ck.

Dieppe, 1 1 cs.

Hamburg, 10

Coal Products (otherwise undes.)—

Dieppe, 115 cks. 3 cs.

Dyestuffs (otherwise undescribed)

Malmo, 1 cs.

Painters' Colours—

Antwerp, 3 cs.

Dieppe, 1 ck.

Hamburg, 3 2 dms.

Port au Prince, 6

PRICES CURRENT.

WEDNESDAY, FEB. 6, 1901.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.B. at maker's works, or at usual ports of shipment in U.K. The price in different localities may

Acids:—

	£	s.	d.
Acetic, 25% and 40%	per cwt.	7/-	10/6
Glacial	per cwt.	50/-	
Ammonia S.G., 1000	per lb.	0	15
Formic	per lb.	0	15
Maleic (Tower Salt), 30% Tw.	per bottle	0	10
" (Cylinder), 30% Tw.	per lb.	0	3
Nitric 80% Tw.	per lb.	0	15
Nitrous	per lb.	0	15
Oxalic	nett	0	3
Phosphoric, 1750	per lb.	0	11
Picric	per lb.	0	10
Sulphuric (fuming 50%)	per ton	15	10
" (monohydrate)	per ton	5	10
" (Pyrites, 168%)	per ton	3	0
" 150%	per ton	1	5
" (free from arsenic, 145%)	per ton	1	0
Sulphurous (solution) S.G. 1025	per lb.	3	0
Tannic (pure)	per lb.	0	1
Tartaric	per lb.	0	12
Arsenic, white powdered	nett	per ton	14
Alum (loose lump)	per cwt.	4	17
Alumina Sulphate (pure)	per cwt.	4	17
Aluminoferrous	per lb.	2	7
Aluminium	per lb.	0	3
Ammonia, Anhydrous	per lb.	0	1
" 480-28" B.	per lb.	0	3
" 24" B.	per lb.	0	3
Carbonate	nett	0	3
Muriate	per ton	23	10
" (sal-ammoniac) 1st & 2nd	per cwt.	39/-	37/-
Nitrate	per ton	41	0
Phosphate	per lb.	0	10
Sulphate (grey) London	per ton	11	5
" (grey) Hall	per ton	11	5
Aniline Oil (pure)	per lb.	0	5
Aniline Salt	per lb.	0	4
Antimony	per ton	32	10
" (tartar emetic)	per lb.	0	9
" (golden sulphide)	per lb.	0	10
Barium Chloride	per ton	6	10
" Carbonate (native)	per ton	3	5
" Sulphate (native levigated)	per ton	45/-	10 75/-
Bleaching Powder, 35%	nett	7	5
" Liquor, 7%	per ton	3	10
Bisulphide of Carbon	per lb.	11	5
Chromium Acetate (crystal)	per lb.	0	0
Calcium Chloride	per ton	2	6
China Clay (at Rancorn) in bulk	per ton	17/6	10 30/-

Coal Tar Products and Dyes:—

Alizarine (artificial) 20%	nett	per lb.	0	0	8
Magenta	per unit	per cwt.	0	3	9
Anthraxene, 30% A, f.o.b. London	per unit	per cwt.	0	1	1
Benzol, 90% nominal	per gallon	0	1	0	1
" 50/50	per lb.	0	1	0	5
Carbolic Acid (crystallised 40%)	per lb.	0	0	5	1
" (crude 60%)	per gallon	0	1	8	
Cresote (ordinary)	per ton	0	0	2	
" (filtered for Lucigen light)	per ton	0	0	2	
Crude Naphtha 30% @ 120° C.	per ton	0	0	5	
Grease Oils, 22% Tw.	per ton	2	10	0	
Pitch, f.o.b. Liverpool or Garston	per ton	1	13	0	
Solvent Naphtha, 90% at 160°	per gallon	0	1	2	
Lucigen and "Wells" Oils	per ton	0	0	2	1/2
Copper	per ton	40	2	6	
" Sulphate	per ton	15	10	0	
" Oxide (copper scales)	per ton	30	0	0	
Glycerine (crude)	per ton	15	0	0	
" (distilled S.G. 1250)	per ton	40	0	0	
Iodine	nett, per oz.	0	0	9	
Iron Sulphate (copperas)	per ton	1	5	0	
" Sulphide (antimony slag)	per ton	2	0	0	
Lead (sheet) for cash	per ton	10	12	6	
" Litharge Flake (ex ship)	per ton	13	10	0	
" Acetate (white)	per ton	24	15	0	
" " (brown)	per ton	15	10	0	
" Carbonate (white lead) pure	per ton	16	0	0	
" Nitrate	per ton	19	0	0	

Lime, Acetate (brown)	per ton	5	1	
" (grey)	per ton	9	1	
Magnesium (ribbon and wire)	per oz.	0	1	
" Chloride (ex ship)	per ton	2	10	
" Carbonate	per cwt.	1	17	
" Hydrate	per ton	17	0	
" Sulphate (Epsom Salt)	per ton	3	0	
Manganese, Sulphate	per ton	17	15	
" Borate	per cwt.	2	15	
" Ore, 70%	per ton	4	5	
Methylated Spirit, 61° O.F.	per gallon	0	1	
Naphtha (Wood), Solvent	per ton	0	1	
" " Miscible, 60° O.F.	per ton	0	1	

Oils:—				
Cotton-seed	per on	18	10	
Linseed	per on	22	0	
Petroleum, American	per gallon	0	0	
Stearine	per ton	26	0	
Phosphorus (yellow)	per lb.	0	2	
" (red)	per lb.	0	2	
Potassium (metal)	per oz.	0	1	
" Bichromate	nett	per lb.	0	0
" Carbonate, 90% (ex ship)	per ton	16	15	
" Chlorate	per lb.	0	0	
" Cyanide, 98%	per ton	21	10	
" Hydrate (Caustic Potash) 80/85%	per ton	30	0	
" " (Caustic Potash) 75/80%	per ton	30	0	
" " (Caustic Potash) 70/75%	per ton	19	10	
" Nitrate (refined)	per cwt.	1	2	
" Permanganate	per cwt.	3	0	
" Prussian Yellow	per lb.	0	0	
" Sulphate, 90% (ex ship)	per ton	9	15	
" Muriate, 80% (do.)	per ton	8	7	
Silver (metal)	per oz.	0	2	
" Nitrate	per oz.	0	2	
Sodium (metal)	per lb.	0	3	
" Carb. (refined Soda-ash) 48%	nett	per ton	4	15
" " (Caustic Soda-ash) 48%	per ton	4	0	
" " (Carb. Soda-ash) 48%	per ton	4	0	
" " (Alkali) 58%	per ton	4	0	
" " (Soda Crystals)	per ton	2	5	
" Acetate (ex-ship)	per ton	14	5	
" Arseniate, 45%	per ton	11	0	
" Chlorate	per lb.	0	0	
" Borate (Boras)	per ton	20	0	
" Bichromate	per lb.	0	0	
" Hydrate (77% Caustic Soda) (f.o.b.) net per ton	per ton	10	0	
" " (74% Caustic Soda)	per ton	8	15	
" " (70% Caustic Soda)	per ton	7	15	
" " (60% Caustic Soda)	per ton	6	15	
" " (60% Caustic Soda, cream) (f.o.b.)	per ton	6	15	
" Bicarbonate	per ton	5	12	
" Hypsulphite	per ton	5	10	
" Manganate, 30%	per ton	18	0	
" Nitrate (95%) ex-ship Liverpool	per cwt.	0	8	
" Nitrite, 98%	per ton	29	0	
" Phosphate	per ton	15	0	
" Silicate (glass)	per ton	5	2	
" " (liquid, 100° Tw.)	per cwt.	4	5	
" Stannate, 40%	per cwt.	3	12	
" Sulphate (Salt-cake)	per ton	0	17	
" " (Glauber's Salt)	per ton	1	5	
" Sulphide	per ton	8	10	
" Sulphite	per ton	2	7	
Strontium Hydrate, 100%	per ton	4	10	
Sulphocyanide Ammonium, 95%	per lb.	0	0	
" Barium, 95%	per lb.	0	0	
" Potassium	per lb.	0	0	
Sulphur (Flowers)	per ton	7	5	
" (Roll Brimstone)	per ton	5	5	
" Brimstone: Best Quality	per ton	3	15	
Superphosphate of Lime (20%)	per ton	2	7	
Tallow	per ton	24	10	
Tin Crystals	per lb.	0	0	
" English Ingots	per ton	64	0	
Zinc (Spelter)	per ton	14	2	
" Chloride (solution, 100° Tw.)	per ton	5	7	

THE HEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

404.

SATURDAY, FEBRUARY 16, 1895.

Vol. XVI.

Contents.

	PAGE		PAGE
ics	113	Miscellaneous Chemical Market ..	120
ology of Sewage	114	Liverpool Oil and Colour Market..	120
ty of Basic Slag	114	The Metal Markets	121
Oxidation of Terpenes	115	Liverpool Mineral Market	121
ential Oils	115	West of Scotland Chemicals	121
gence	116	Tyne Chemical Report	121
Exports for January	116	Hull Paint, Oil, and Colour Report	121
ry Jottings	117	New Companies	122
on	117	The Patent List	122
Petroleum from U.S.A.	118	Gazette Notices	122
rmah	119	Imports	122
monia Products	120	Exports	125
lanure Material	120	Prices Current	128

ADVERTISEMENT.

ICAL Manufacturers.—Advertiser at Liberty
st to Represent good house; 16 years' experience, in and out.—Apply,
mical Trade Journal Office, Manchester.

SUBSCRIBERS ARE REQUESTED TO NOTE THAT THE

K AND TITLE PAGE FOR VOL. XV.

Will be Issued with No. 405, February 23, 1895.

Notices.

Communications for the *Chemical Trade Journal* should be
and Cheques and Post Office Orders made payable to—

IS BROS., 32, Blackfriars Street, MANCHESTER.

Our Registered Telegraphic Address is—

"Expert, Manchester."

Terms of Subscription, commencing at any date, to the
Trade Journal,—payable in advance,—including postage
of the world, are as follows:—

ly (52 numbers) 12s. 6d.
-Yearly (26 numbers) 6s. 6d.
terly (13 numbers) 3s. 6d.

Communications for the Editor, if intended for insertion in the
ek's issue, should reach the office not later than Tuesday

Advertisements.

Advertisements of Situations Vacant, Premises on Sale or To be Let,
is Wants, and Specific Articles for Sale by Private Contract are
be *Chemical Trade Journal* at the following rates:—

30 Words and under 2s. 6d. per insertion
Each additional 10 words 6d. "

Advertisements, Announcements in the Directory Columns, and all Adver-
t prepaid, are charged at the Tariff rates, which will be forwarded on

ements intended for insertion in the current week's issue
h the office by Wednesday morning at the latest.

CURRENT TOPICS.

ADVANCES IN CHEMICAL GOLD RECOVERY.

A PROCESS which promises to make a considerable
change in the extraction of gold by potassium cyanide
has recently been made known.

The drawback to the process of the Cassel Gold Extracting
Co. was the need for oxygenation, as during this part of the
process some of the potassium liberated combined with
oxygen and the sulphides so often found in the ores to form
compounds which interacting with some of the potassium
cyanide introduced for solvent purposes, yielded products
valueless as far as their extractive action upon the gold is
concerned.

The latest improvement does away with oxygenation, a
small quantity of cyanogen bromide being used instead. In
the absence of free oxygen, this causes the liberated
potassium to combine with the bromine to form potassium
bromide, which is inert as far as the solvent action of the
potassium cyanide is concerned. There is, no doubt, room
for improvement in the treatment of tailings, and this new
process gives promise of achieving an advance in this direc-
tion, though it remains to be seen how the value of the
increased yield of gold compares with the cost of the
cyanogen bromide and general working expenses. We
anticipate having fuller particulars of the process in these
columns shortly, and therefore consider it desirable to
abstain from any serious criticism of the prospective merits
and demerits at present.

In conjunction with this process there is, however, another
important matter in the shape of a process for treating
slimes, which are at present seldom, if ever, dealt with.

The difficulty which has proved insurmountable in the
past has been the extreme density of the slimes, which has
prevented the percolation of any solvent solution. To over-
come this a new process aimed at destroying surface ten-
sion and effecting agglomeration has been devised, and
accomplishes its end by the addition of soap solution, which
is well stirred into the slimes, the whole being finally clotted
by the addition of lime. In this way the slimes are rendered
amenable to the cyanide solution, while the loss of small
particles of gold, floating on the surface, is prevented.

POISONING FATALITIES.

According to the latest report of the Registrar-General on
deaths from poisoning, chemicals, generally speaking, do not
appear to figure as prominently as popular opinion would
lead us to infer. Excepting, of course, carbolic acid and
lead, and dealing only with accidents as distinguished from
suicides, opium and chloroform are responsible for the greatest
number of deaths, and alcohol has been responsible for twelve.

With regard to chemicals, iodine, potassium cyanide,
chlorine, zinc chloride, caustic soda, and aniline were only
responsible for one each. There were no accidents at all

with bichromate of potash, though there were three suicides. Among acids, oxalic caused seven deaths, nitric acid and acetic acid two each, sulphuric acid and prussic acid five, and hydrochloric acid eight. Arsenic and phosphorus each caused four deaths, while sixteen are attributable to carbon dioxide.

There are some rather curious items in the list of articles from which deaths from poisoning have resulted. One of the most striking on the list is Beetham's pills. Another somewhat out-of-the-way article is fermented condensed milk. Among other articles to which suspicion would not be attached in the ordinary way are orange peel, glycerine, ice, and smoke. There are, of course, the usual batch of fatalities resulting from poisonous fish, improper food, and unripe fruit. In the case of fish, as many as fourteen deaths have resulted. It is a noteworthy fact that corrosive sublimate, though such a deadly poison, is only responsible for one accident and two suicides, whereas coal gas caused nineteen deaths by accident and proved fatal in two cases of suicide.

THE APPLICATION OF TECHNICAL EDUCATION GRANTS.

The return which has been made just recently on this subject reveals, on the whole, a satisfactory state of affairs—satisfactory, that is to say, as compared with the state in 1891. The grants to County Councils are, in 41 out of 49 cases, devoted entirely to educational purposes, the remaining eight being partially devoted to education. In no case is the whole of the grant devoted to relieving the rates. In 1891 this was done in two instances. Out of sixty-one borough councils the whole grant is rightly employed by 53, and seven use a part. In one case only, namely, Preston, is the grant entirely used for the relief of the rates. It is interesting to learn that, in spite of the grants made out of the £140,000 surplus from the Customs and Excise duties, and under the Local Taxation Act of 1890, in ten places county borough councils have availed themselves of their rights under the Technical Instruction Act of 1889, and devoted sums out of the rates to the purposes of education in cases of pressing need.

THE BACTERIOLOGY OF SEWAGE.

THE Main Drainage Committee of the London County Council have made a report on the result of Mr. J. Perry Lewis's and Dr. Andrews's investigations into the bacteriology of sewage. These investigations showed that if the organisms existing in sewer air were derived from those existing in sewage, the bacteria of sewer air should bear a close resemblance to the bacteria of sewage. On contrasting the prevailing organisms of sewage with those of sewer air they were found to bear no resemblance whatever to one another; indeed, so far as the investigators were aware, not a single colony of any of the organisms found to predominate in sewage had so far been isolated from sewer air. Attention was also specially directed to the possible occurrence of the typhoid fever bacillus and the diphtheria bacillus in ordinary London sewage. Therefore every colony which seemed likely to belong to either of these species was the subject of careful investigation. No evidence, however, of their occurrence in ordinary sewage was found. It was pointed out that the failure to find these organisms in ordinary sewage no doubt arose from the fact that the infected material constituted such a minute proportion of the total bulk of sewage discharged by the sewers. The mathematical chances, therefore, of detecting those organisms were exceedingly minute, unless they were capable of vigorous growth and multiplication. Realizing this fact, search was made for the typhoid bacillus in sewers where it might be expected to exist in much larger proportion. On examining sewage taken from the sewer draining the fever block at the Eastern Hospital, after disinfection had been discontinued for a short period, the existence of the typhoid bacillus was satisfactorily shown—an important fact which had not hitherto been demonstrated. A series of experiments were also made to determine the fate of the typhoid bacillus in sewage, in order to verify or disprove the statement made by many writers that disease germs, such as the typhoid bacillus, found in sewage a suitable soil for their

growth and multiplication. On careful investigation it had been found that the bacillus of typhoid fever was not only incapable of any growth and multiplication in sewage, but that after the first 24 hours it died and surely died out, its ultimate death under natural conditions being matter of a few days, or at most one or two weeks. If the organisms which existed in overwhelming numbers in sewage did not exist in sewer air, how indefinitely remote was the possibility of the existence of the typhoid fever bacillus in the air of the sewers? Sewage was out of doubt a common medium for the dissemination of typhoid fever, but sewage-polluted soil might give up germs to the subsoil air; but the results of these investigations appeared in the highest degree likely that the air of the sewers should play any part in the conveyance of typhoid fever.

THE SOLUBILITY OF BASIC SLAG.

IN a paper read before the Cleveland Institute of Engineers, C. R. Soluble discusses certain statements published as Prof. Wagner's, and current impressions, relating to the "fertility" of various makes of basic slag, as measured by the solubility of the phosphoric acid, some of which, particularly the latter, were, in his opinion, misleading.

1. That the solubility represented or was closely parallel to the ability for plant life under actual agricultural conditions.
2. That the more soluble slags were also generally higher in silica.
3. That slags having a higher "percentage solubility" were valuable than those with a low percentage solubility, though former might contain only 10% or 12% total phosphoric acid against 17% or 18% in the latter.

An instance of the third proposition cited was in a pamphlet, which was a translation of a paper by Professor Wagner, published probably for farmers, in which were tables giving numerical values in of different makes, which, as printed, were altogether incorrect, a having 8.44% soluble phosphoric acid being valued at 100, while having 17.48% nearly twice as much, was only valued at 81, because only this percentage of the total phosphoric acid was so. These values held good per unit, but this had not been stated, as consequence of such statements, entirely false impressions had created, which it was important to remove, as they might be serious to makers and farmers.

He had carefully examined the six crystalline constituents of slag, three of them phosphoric, and three non-phosphoric, as which Mr. Stoad and himself had discovered and described for the time to the Chemical Society and Iron and Steel Institute in 1887.

He had also examined a number of basic slags, including the the North Eastern Steel Co.'s make (which gave very good results number of other British makes, all of a degree of fineness as put on market, as well as silicious cinders for comparison. Of these he determined the "citrate solubility" by Professor Wagner's method with the effect of friction on the same, the composition the carbonic acid water solubility, and had drawn up a number tables and diagrams (which were shown by means of lantern slides kindly prepared by Mr. Stoad) illustrating the results.

He showed that—That portion of the phosphoric acid not soluble the first treatment by the "citrate" test, as conducted, is not so easily unavailable for plant life, even during the first year, as existing conditions such as:—

1. More solvent.
2. Greater degree of fineness.
3. Longer time.
4. Friction, such as may take place between the earth and slag, etc., may render it all soluble.

That pure tetrabasic phosphate of lime, whether natural (as in transparent plates) or artificial (as prepared synthetically by Mr. Stoad) are completely soluble, and as readily so as the blue crystalline slag if the citrate used is proportioned to the phosphoric acid present.

That increased quantities of poorer slags, containing the same quantity of soluble phosphoric acid as richer varieties, and which if when treated with fixed quantities of solvent (as would under agricultural conditions be the case) yield an equal amount, do not yield much less.

He dissented strongly from the expression of results in terms "percentage solubility," and drew many comparisons between the absolute solubility.

His earlier experiments showed the alleged close relations between the silica content and the "percentage solubility" to have also many exceptions to as samples of the rule, and that there was a beyond which the higher the silica the less the solubility. He tended that only practical tests extending over years could show real value of slags of different degrees of solubility, and that no this would come carbonic acid water tests.

herefore sought further for the principles governing this, and terminating what bodies the citrate solution dissolved preferentially as well as from a close study of the behaviour of whole series of, and of other evidence adduced, felt there was good ground following conclusions. The "percentage solubility" depends

The actual content of phosphoric acid, varying inversely to it.
The neutrality, or freedom from excess lime (and possibly certain other bases).

That silica does not *per se* increase this, but only—

(a) When it combines with, and thus neutralises excess of lime, and possibly certain other bases.

(b) When as a condition of the presence of a large quantity of silicate of lime (which silicate appears not to interfere with the solubility in the quantities in which it is generally present) there is only a low total percentage of phosphoric acid present.

That silica decreases this when present in quantities greater than required in 3, or sufficiently large to bring about the formation of silicates of iron or manganese.

That excess of oxides of iron and manganese have a very small effect, almost negligible when compared with that of lime, the actual solubility being the resultant of the inner action of each of these conditions, as are present.

Absolute Solubility or actual amount dissolved depends on—

The actual content of phosphoric acid, varying directly with it, and in other respects following 2, 3, 4, and 5.

These conclusions he showed that if any maker's slag has a solubility it is necessary in the first place to determine to which causes this is due, in order to decide what cure to adopt, or if any is practicable.

AERIAL OXIDATION OF TERPENES AND ESSENTIAL OILS.

T. KINGZETT, F.I.C. (ASSISTED BY D. HOMFRAY, B.Sc.).
Introductory.

A number of papers communicated to the Chemical and other Societies, &c., I have from time to time described the results of investigations, conducted at intervals during the past 20 years, showing the limited oxidation (by means of a current of air) of terpenes and the so-called essential oils containing them.

The chief result has been to establish the fact that in all cases among the products of oxidation an organic peroxide is formed, which, in contact with water, gives rise to the formation of peroxide of hydrogen; so that if the oxidation be conducted in the presence of hydrogen peroxide is always found, and is accompanied by other products in the resulting aqueous solution. I have also shown that the use of hydrogen peroxide is good if air be substituted by oxygen or ozone.

When hydrogen peroxide is formed there also passes into solution a substance which, judging from the result of two analyses made by me in 1879, appeared to have the composition corresponding to the formula $C_{10}H_{16}O_3$. I have, however, since made a great number of analyses of this substance, obtained by the oxidation of different terpenes, from which it appears that its composition is represented by the formula $C_{10}H_{16}O_3$.

In addition to this body and the peroxide of hydrogen, the aqueous solution contains a small quantity of another substance, which, upon distillation, is carried over by the steam, and collects in the receiver as a light yellow-coloured oil, with a characteristic smell, and which analysis appears to have the composition $C_{10}H_{14}O$.

At the time I thought it possible that the organic peroxide I had described was identical with the camphoric peroxide which had been previously described by Brodie (*Proc. Roy. Soc.*, 9, 361, and 12, 655; *Trans.*, 1863, 407; and *Chem. Soc. Jour.*, 1864, 266), but since I have repeated his work, and have shown (*J. Chem. Soc.*, 1884, 1) that he was mistaken in his view. The peroxide of hydrogen was obtained in his experiments resulted, as I then demonstrated, from the action of camphoric acid (formed in its turn by the action of water upon the camphoric anhydride which he employed) and peroxide of barium, and not, as he concluded, from the action of upon a barium compound of camphoric peroxide. I have since shown, as well, however, to retain the name for the substance as it is always formed when air, oxygen, or ozone acts upon the terpenes and essential oils containing them. At a later date I deemed it probable that there was a near relation between this camphoric peroxide and camphorogenol of Yoshida, but a few simple experiments (*Chem. Ind.*, 1888, 549) sufficed to demonstrate that the said camphorogenol had but a hypothetical existence, and merely consisted of camphor dissolved in camphor oil.

Strong, in describing the results of his re-examination of the substance of sobrerol, $C_{10}H_{16}OH_2O$, as originally observed by Sobrerol, expressed the belief that in the oxidation of American turpentine

that substance is always first produced; but, however that may be, sobrerol is not the substance which gives rise to the formation of peroxide of hydrogen, and is not to be regarded as having the constitution which the formula, $C_{10}H_{16}O_3 = C_{10}H_{16} + H_2O_3$, adopted by Armstrong (*J. Chem. Soc.*, 1890; *Proc.*, 100) might lead one to infer. I may here add that whether or not sobrerol is at all times formed by the atmospheric oxidation of turpentine, its formation is never observable except in the presence of sunlight. Of course it may be formed and dissolved in the partially-oxidized oil which is always kept in motion during my process, but nothing crystalline in character is ever to be seen during the oxidation, as conducted in the laboratory or the works, by means of a stream of air, oxygen, or ozonized air. Quiescence and sunlight are two absolutely essential conditions for its visible formation.

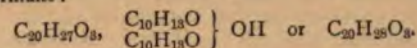
In addition to the results already noted, a good deal of information has been obtained concerning the chemical changes to which some of the substances above mentioned are susceptible.

Chemists who are familiar with my early work in connection with this subject will remember that the presence of a camphoric acid was, I then thought, indicated (See *Journ. Chem. Soc.*, 1875, 210—220) as a constituent of the aqueous solution which results from the limited oxidation of terpenes in the presence of water. My more recent work on the subject, however, tends to show that the compounds of lead and iron then obtained and analysed were derived from the body $C_{10}H_{16}O_3$. It will be seen from what follows that this substance in aqueous solution is capable, under certain conditions, of forming unstable compounds with some of the metals, and that upon continued heating of such a solution on the water-bath it is decomposed, the product being only partially soluble in water.

Many experiments have also been made with the object of separating the different products obtained in the aerial oxidation of turpentine. These experiments have consisted, in the main, of subjecting the oxidized oil to distillation in a current of air at 60° C. and also at 100° C., after which the distillates and the residues were carefully analysed. From the results of these analyses, it appears that when the oxidized oil is distilled in a current of air, there first of all passes over the unaltered terpenes, which portion is quite colourless; afterwards there collects in the receiver a small quantity of a light-yellow coloured oil having the composition $C_{10}H_{16}O$, and finally there distils over a small quantity of a darker coloured oil of the consistency of glycerol, which has the composition $C_{10}H_{16}O_3$. The residue in the flask proves, on analysis, to have roughly a composition of about $C_{10}H_{14}O_3$.

When a current of dry air was passed through the oxidized oil kept at 60° C., until nothing further distilled over, it was found, on raising the temperature to 100° C., that a small quantity of water collected in the distillate, together with a light-yellow coloured oil, with an odour slightly resembling cymene. The amount of water thus collected was very small, but no doubt much more was absorbed and carried off by the air, which had been previously dried. Now it is found that when the oxidized oil has been heated for some time at 100° C.—until all the volatile matter has been driven off—it is no longer capable of forming hydrogen peroxide on shaking up with water; further, none of the distillates have the power of giving rise to peroxide of hydrogen when placed in contact with water. It is therefore evident that the body which gives rise to the formation of hydrogen peroxide is decomposed at 100° C., and it seems very probable that the formation of water above mentioned is due to this decomposition. This formation of water may also account for there only being 14 atoms of hydrogen to 10 of carbon in the substance ($C_{10}H_{14}O_3$) which is obtained on heating the oxidized oil at 100° C. until all the volatile matter has been driven off. In this connection it should be noted that the body, $C_{10}H_{14}O_3$, upon digestion with water, gives rise to a hydrate of the composition $C_{10}H_{16}O_3$.

Finally, I shall have to describe a remarkable new product, which, so far, has only been obtained from oxidized American turpentine, and which can be approximately represented by one of the following empirical formulæ:



This new substance is remarkable on account of its extreme insolubility, for so far as yet ascertained it is soluble only in chloroform and carbon bisulphide.

In concluding these introductory observations, I may express the opinion that in the aerial oxidation of the terpenes there is no breaking down of the C_{10} group. It is true that acetic acid is found—as was shown by me some years ago—in appreciable quantity among the oxidation products of crude Russian turpentine, but I believe it does not arise from the oxidation of the terpenes, but from some impurity in the commercial oil (for the method of extracting which see my work on *Nature's Hygiene*, Balliere and Co., 3rd edition, 308—310). When American turpentine is oxidized, little or no acetic acid is found in the aqueous solution.

(To be continued.)

Legal Intelligence.

SUPREME COURT OF JUDICATURE.

(Before the Lord Chancellor and Lords Watson, Ashbourne, Macnaghten, and Shand.)

SALT UNION v. DEAKIN.

The hearing of these cross appeals has been occupying the courts for some time. The full evidence has been given previously in the *Journal*.

The question at issue is whether there has been a breach of agreement on the part of the Union with regard to commission allowed and the price charged for salt. Sir Richard Webster continued his argument on behalf of Mr. Deakin, and contended that the evidence showed that the prices charged to him for certain classes of salt had been higher than the lowest prices charged to other distributors and dealers, and that he had in many instances not received a commission equal to the highest commission for the time being paid by the Union to any other distributor. Lord Shand said he would have no difficulty in holding that it was a breach of the contract if salt were sold by other agents than the respondents at a lower price and the agents got a higher commission.

In conclusion, Sir Richard contended that if the judgment was that the prices charged by the appellants to Deakins were to be higher than the lowest prices charged to other dealers, companies, or persons the agreement might as well be torn up.

Mr. Will, Q.C., followed on the same side.

Sir Henry James replied, contending that in any event the case should be sent back to the referee to ascertain if the price paid for the Ramoren works was a consideration for the price at which Deakins were to receive their salt. His main contention, however, was that the price of Ramoren salt did not concern Deakins at all.

Their Lordships reserved judgment.

HIGH COURT OF JUSTICE.

QUEEN'S BENCH DIVISION.

(Before Mr. Justice Charles, without a jury.)

FRASER AND CHALMERS (LIMITED) v. H. S. FOSTER.

This was an action to recover £580. 9s. 9d. upon an alleged guarantee. The defendant denied giving any guarantee whatever, and said that he had offered to give one but the offer was not accepted.

In giving judgment Mr. Justice Charles said the plaintiffs seek to recover from the defendant £580. 9s. 9d., being the amount of a bill of exchange drawn by the London Colonial Finance Corporation and accepted by the Anglo-Serbian Exploration Company (Limited) upon a guarantee given by the defendant, they allege, in a letter dated January 2, 1894. The facts of the case are really undisputed. The whole question turns upon the construction to be put upon the letter. The plaintiffs agreed to supply the Anglo-Serbian Company, of which company the defendant was chairman, with some mining machinery. In October, 1893, they wrote stating their willingness to accept a bill in payment therefor, accepted by the London Colonial Finance Corporation, the managing director of whom was the defendant. That offer was accepted, but it appeared, when the machinery was nearly completed, the plaintiffs resolved to do nothing further unless they got additional security. Mr. King, a director of the Anglo-Serbian Company, offered his guarantee, but the plaintiffs asked for the defendant's as well. Mr. King then went to the defendant, who at once wrote a letter for him to take to the plaintiffs, in which he spoke of the extreme importance of the machinery being delivered at once, and went on to say, "On the understanding there is not a moment's delay in carrying out the order, and in consideration of the payment to me of a commission of 2½ per cent. for my guarantee, I am willing to guarantee the due payment of the said bill." Mr. King returned to the plaintiffs, who were satisfied, and the machinery was sent as quickly as possible. Mr. King said the defendant next day that it was all right. Mr. Foster, in his evidence, says that he interpreted that to mean that it was all right, without his being required to guarantee the payment of the bill, and that he expected to have to sign something further and to receive the amount of the commission before being personally liable. A curious fact in the case is that it was not until February 25, nearly two months later, that the plaintiffs wrote acknowledging the guarantee, and expressing their willingness to pay the commission. The defendant then repudiated the guarantee, and subsequently returned a cheque sent to him for the commission. I have to consider whether by his letter the defendant did really guarantee the payment of the amount. When I look at the letter as a whole, I am of opinion that it was written with the intention of its being an actual guarantee, and that the payment of the commission therewith was not a condition precedent to its taking effect. I think the document imparted a present advantage to the de-

fendant, and that the plaintiffs have performed their part of the contract. I therefore give judgment for the plaintiffs for £580 with costs.

A stay of execution for a week was granted upon the usual terms.

CHANCERY DIVISION.

(Before Mr. Justice Romer.)

LEONHARDT AND CO. v. KALLE AND CO.

This is an action brought by the plaintiffs, who are chemists and dyestuff manufacturers at Mulheim, in Germany, against Kalle and Co., dyestuff manufacturers in a like way of business at Biebrich, and J. E. Ritter of Manchester, their agents. The plaintiffs' claim is for an injunction to restrain the defendants from selling dyestuff manufactured to the manner described in a patent of which they are proprietors. The sales relied upon are by the defendants J. E. Ritter, Mr. James Lomax, of Cannon-street, and to other persons. The defendants deny infringement, and dispute the validity of the patent on the grounds of ambiguity, want of novelty, and anticipatory invention. A German specialist, gave evidence in support of the plaintiffs' case.

Dr. Bender and other scientific witnesses were examined, and Sir Edward Clarke, Q.C., opened the case for defendants.

After a somewhat lengthy hearing, judgment was given for the plaintiffs.

IMPORTS AND EXPORTS FOR JANUARY.

THE Board of Trade returns for the past month are on the whole satisfactory. The imports of oils show an increase. As regards the exports of alkali, there is an increase in the quantity, but falling off in the value.

IMPORTS OF FOREIGN AND COLONIAL PRODUCE.

ARTICLES.	Quantities.	1894.
Margarine	Cwt.	120,722
Copper Ore and Regulus.....	Tons.	12,931
Pyrites.....	"	61,526
Tin	Cwt.	78,063
Alkali	"	6,898
Brimstone	"	55,815
Dyes, Coal Tar	£.	48,394
Saltpetre	Cwt.	16,281
Petroleum	Gall.	14,130,526
Turpentine.....	Cwt.	13,274
Guano.....	Tons.	3,797
Nitrate of Soda	"	9,918
Paraffin	"	89,917
Rosin	Cwt.	108,864
Tallow and Stearine.....	"	160,997
Oil Seed Cake	Tons.	30,754
Wood Pulp.....	"	24,715

EXPORTS OF BRITISH AND IRISH MANUFACTURES.

ARTICLES.	Quantities.	
	1894.	1893.
Alkali	Cwt.	483,812
Cement ..	Tons.	27,032
Coal and Coke	"	2,623,988
Copper, all kinds	Cwt.	83,099
Iron and Steel	Tons.	161,804
Chemical Manures	"	28,074
Oils, seed	"	5,616
Salt	"	49,271

THE SALT UNION DIVIDEND.—The directors of the Salt Union Limited, have declared a dividend of 2½ per cent. on the shares for the past year, carrying forward £10,000. At the corresponding period last year the distribution was 3 per cent., and £10,000 was carried forward. It is proposed to issue debenture stock to meet the capital expenditure on new properties and business arrangements.

A FATAL FIRE: PRESUMABLY PETROLEUM AGAIN.—The Glasgow City Fire Brigade were called to an outbreak of fire, at 54, Bell-street, last week. The top story and roof were entirely destroyed. Over the debris the firemen found the charred remains of a man, M'Daid, aged 39, shop joiner, married, who had been living in the flat. It is supposed that his clothes caught fire through a gas lamp capsizing, as the lamp was found at his side. Part of the body was discovered in the flat beneath.

Parliamentary Notes.

COAL-DUST IN MINES.

Thomas asked the Home Secretary whether, with a view to the doubt still unfortunately existing in the minds of many gaged in colliery operations as to the effect of coal-dust in and intensifying explosions in mines, he would cause experiments to those made by Mr. Hall in Lancashire to be made in mining districts, especially in South Wales, and with coal-dust from mines in the locality in which the experiments were workmen and officials jointly under the supervision of the conducting the experiments.

With : I gather from the question that what is desired is that of drying coal-dust in mines should be demonstrated, not for of experts, but for the instruction of workmen. No specific are embodied in the question. The impossibility of doing shed depends to some extent upon the cost involved. I cannot at any scheme that is suggested for carrying out the desired I be carefully considered by me, and so far as practicable I ad to go on with its execution.

FACTORY LEGISLATION.

Wilke asked the Home Secretary whether it was intended to and, if possible, to ask the House to read a second time the Factory Bill named in the Speech from the Throne, such Bill promised by him, in order that they might be sent to the Committee.

With : It has always been the intention of the Government to use to send these Bills to a Standing Committee. I cannot make any statement as to the date of their introduction, but there will be no avoidable delay.

CANAL POLLUTION.

PROSECUTION OF THE SALFORD CORPORATION.

In the hearing of this case, which has been sufficiently protracted, and to a conclusion on the 7th inst., when his Honour Judge Parry paid a visit to the sewage works in person, gave judgment in the Manchester County Court. In this case there was the usual conflict of fact, but of scientific opinion, which seemed rather to the Judge ; still he managed to thread the labyrinth very well, and the practical conclusions were concerned. Following our evidence, we shall only give an abstract of the expert evidence, and the judgment in full. For the prosecution : Messrs. Jephson and another spoke to obtaining samples of the

Mr. A. Tatton, chief inspector to the committee, said that when they had been in the office for a few days they gave out a report that, in his opinion, it was not possible to turn out a satisfactory effluent by lime precipitation only, and that there was sufficient evidence at Salford works for artificial filters.

Mr. Scudder said he had analysed the samples and found them to be, in 1893, and they had been bad ever since, and, though clear in appearance, they had a putrescent smell. In answer to the Judge, he said the samples contained sewage matter.

Mr. Roscoe, the consulting chemist to the Joint Committee, said the samples undoubtedly showed the presence of sewage matter, and precipitation by lime was anything but a satisfactory method with sewage, and he did not think that carbonation or aeration an adequate remedy. If filtration were adopted he had no doubt that the Salford sewage would be very much improved. The further hearing of the case was adjourned.

On January 25th, the previous witness was recalled, and he had visited the sewage works on the previous day, and saw and indicated that the method of treatment was in any essential way different to the ordinary form of lime treatment.

Mr. Naylor said he was satisfied that the lime treatment alone was sufficient without filtration.

Mr. Odling said that there was any amount of recorded evidence at the process of clarifying sewage by lime was not satisfactory ; works at Salford were well arranged, and the process was to be very satisfactorily carried out, barring, of course, the fact that so much free lime was used.

In defence, Mr. J. Carter Bell, Corporation analyst, stated that the effluent was of a very bad and variable composition, and it was not purify, as it contained nearly 50 per cent. of dye-house effluent. The old lime process was faulty, but the new lime process was, in opinion, perfect ; there was a radical difference in the two processes. The effluent was not liable to secondary

decomposition. In cross-examination, he stated that the effluent was the best ever obtained at the Salford sewage works, and quite good enough to enter the Ship Canal.

Professor J. A. Wanklyn stated that he had examined samples of the Salford effluent and found them to be the best effluents he had ever seen, much better than the general effluent from sewage farms. He further stated, as his "deliberate opinion," that the process was "the best for sewage treatment that has come out," and the effluent "not more liable to secondary decomposition than ordinary drinking water is."

Mr. W. Thomson stated that he considered the Salford effluent to be a good one, and not liable to secondary decomposition, and that it would not be improved by filtration. The odour of the effluent was not a putrid one.

Mr. George E. Davis stated that he had examined many samples of the Salford effluents, especially when worked with excess of lime. He considered the excess of lime broke up all the original putrescible albuminoid matters of the sewage and converted them into non-putrescent substances. The process differed entirely from the old lime process, in that the effluent from it did not undergo secondary decomposition, while the effluent from the old lime process usually stank in a few days. Asked by the Judge whether the Salford process was any good if a carbonator was not employed, the witness stated that it would be efficient if any other means were taken to neutralise the excess of lime, such as sulphuric acid or sulphurous acid, but carbonic acid was the cheapest.

Mr. Carter Bell was recalled, and stated that a small carbonator had been used but had failed, and sulphuric, sulphurous, and hydrochloric acids had been used at various times, also nitre cake, but all these were too costly, and now a new carbonator had been ordered.

Mr. A. Fowler was then called to prove that the culvert through which the effluent entered the Canal was constructed prior to the passing of the Rivers Pollution Act.

This concluded the evidence* for the defence, and on Monday Mr. Judge Parry paid a visit of inspection to the sewage works. What he saw and smelt may be inferred from his "judgment."

His Honour said the offence as laid, charged the defendants with putting solid or liquid sewage matter into the Irwell, and into the Manchester Ship Canal. No evidence was given of solid matter having been put into either the river or the canal, and no evidence was given of anything being put into the river Irwell, unless the Irwell was the Manchester Ship Canal. The offence in regard to which evidence was given was that of pouring liquid sewage matter into the Ship Canal on or about the 10th October, 1894. The first question was, Did the Corporation of Salford pour liquid sewage matter into the Ship Canal? It was admitted that the defendants collected the sewage of Salford on the banks of the canal, and having treated it by a lime process, poured the effluent into the canal. Was this effluent liquid sewage matter? He thought there was no doubt that it was. Mr. Bidder, for the defendants, contended that inasmuch as Part 3 of The Rivers Pollution Act, 1876, dealt with manufacturing pollution, therefore sewage matter did not include manufacturers' refuse. He did not agree with this. He thought the words "sewage matter," in Section 3 of this Act meant that which in the ordinary course was collected into the public sewer, whether it be from domestic houses, streets, or manufactories. Something was said about pollution caused by the lime used in the process, and Mr. Bidder made a further point that in any case the lime used for the treatment of the sewage was not sewage, and that the outfall channel from the tanks to the canal was not a sewer. He did not agree with him, but it was scarcely necessary to decide it, as he found as a fact, that wholly apart from the lime going into the canal, the defendants were pouring liquid sewage matter into it every day. The evidence upon this question was overwhelming, and, although he did not accept Mr. Bidder's test as correct, that Act meant by liquid "sewage matter" that which was subject to secondary decomposition, yet he had little doubt after reading the evidence that this effluent was, in fact, liable to secondary decomposition. Mr. Tatton, the plaintiff's inspector, described the putrescent smell of the effluent, and he and other witnesses described the scum where the effluent met the waters of the canal. Mr. Frank Scudder, whose excellent analysis and tables had been of the greatest service to him in the case, showed conclusively that the effluent was, from the point of view of a chemist, a noxious and polluting liquid, and Sir Henry Roscoe and Dr. Odling—men of great eminence in their profession—bore out his opinion. Even Dr. Wanklyn, who was called by the defendants, admitted that upon the analysis of Mr. Scudder, taken by itself, he would have said that the effluent was probably polluting. But he and other chemists called by the defendants declared that chemical analysis was not of any real service in discovering whether the effluent was or was not polluting. That being so, it was a little curious that the defendants should have thought fit to call three chemists—omitting, by the bye, their own con-

*The detailed evidence may be seen in the *Salford Chronicle* of January 25th and 26th, and February 2nd, of this year.

sulting chemist, Dr. Burghardt, a well-known authority in these matters, who was in court—and did not put in the box Mr. Farmer, the manager of the sewage works, who could have given much practical information. However, he had not relied wholly on chemical or other evidence, but had seen and smelt for himself. He could not see how anyone, not being a chemist and a witness, smelling the smell and seeing the steam (even as he saw it on a cold, frosty Monday morning, when he understood the effluent was at its best) could come to any conclusion but that the effluent was unwholesome, noxious, and polluting, and liquid sewage matter within section 3 of the Rivers Pollution Act, 1876. This being so, were the defendants using the best practicable and available means to render the sewage matter harmless? It was scarcely contended that they were. They used a lime process, and admittedly up to 1893 all experts were agreed that the lime process by itself, and without filtration, was not sufficient to purify an effluent. Advised by Mr. Carter Bell, Mr. Corbett, the borough engineer, and other competent advisers, the defendants in July, 1894, resolved that an application should be made to the Local Government Board for sanction to borrow a sum not exceeding £50,000, for carrying out a scheme of sewage purification. This resolution had not been rescinded, and the defendants called no one to explain the delay on their part in acting upon it. The case on this point was lamentably weak, and every effort seemed to have been made to keep from the plaintiffs and also from the court any detailed information about what their best practicable and available means were. The so-called new lime process of Mr. Carter Bell was only one of those experiments which had been carried out at the works. Salford had in the past admittedly done good work in making experiments, but the time had come when they should make use of the information they had gained by those experiments. It was abundantly clear that they could produce a far better effluent than that which they were producing, and that they were not using the best practicable and available means to render the sewage harmless. The offence had thus been proved, and he had only now to consider a legal question that had been raised. It was said that the Joint Committee had no right of action against the Salford Corporation, inasmuch as they were a statutory body, and that no right to bring such an action had been conferred upon them by any statute. He quoted from the Rivers Pollution Act of 1876 and other statutes bearing upon the case, and said it would seem from these that the Salford Corporation was open to actions in respect of the pollution by the District Councils whose districts abutted on the canal and the County Council of Lancashire, to say nothing of any private person who suffered injury. The Joint Committee also contended that they were entitled to bring an action against the Corporation on account of the pollution. The Joint Committee was formed under the Local Government Act of 1888, and he found that the Local Government Board had conferred all the powers of the Act upon the Joint Committee, except in so far as they were limited by the words "for the purpose of enforcing the provisions of the Rivers Pollution Act, 1876, in relation to certain portions of the river Mersey, or any tributary thereof." They were given powers over no other streams whatever. The question therefore came to this, Was the Ship Canal, as now existing, the river Irwell or any tributary thereof, or the river Mersey or any tributary thereof? If this was, then the plaintiffs had a right of action; if it was not, they had none. The Ship Canal was opened for traffic on the 1st January, 1894. At the date of the offence charged it was, as it still was, an artificial canal for big ships, occupying in part, but only to a very limited extent, the former geographical position of the river Irwell. The water the canal contained was diverted from a large number of rivers, of which the rivers Mersey, Irwell, Weaver, and Bollin were the most important. The Act of Parliament authorising the canal was passed in 1885, and in May, 1891, the canal was, he believed, in course of construction. It was obvious, therefore, that the draughtsman of the provisional order knew of the canal, and might, if he chose, have specially mentioned it in the order, but he had not done so. As to the contention that the Ship Canal was the river Irwell, he held that popularly or geographically speaking it was nothing of the sort, and he could find no words in the Ship Canal Act to countenance such an argument. Powers were given, as in Section 29, and many other sections, to interfere with the Irwell, but nowhere was the completed canal spoken of as a river. The plaintiffs in their notice of action spoke only of the Manchester Ship Canal, and in their particulars of claim of the river Irwell and the Ship Canal. Mr. Sutton at one time contended for jurisdiction over the docks, and at another did not, showing how difficult it was to define the jurisdiction of the plaintiffs if a forced and unnatural meaning was to be put on the words *river Irwell*. Then it was contended, with more hopefulness, that the Ship Canal was a tributary of the river Mersey. It was, of course, a very far-fetched description of the Manchester Ship Canal to call it a tributary of the Mersey. Its waters, some of them, reached the Mersey just as the waters, or some of the waters, of every lake and reservoir reached a river and thence the sea. But a lake, as far as he knew, had never been described as the tributary of a river because its waters found their way into the river. Bala Lake was not a

tributary of the Dee; Grasmere Lake was not a tributary of the Windermere; nor were the lakes that joined the Thames tributaries of that river. The word *tributary* in geographical, as well as everyday language, had a well-known meaning, viz., a natural river or brook running into another natural river or brook. Outside a law court it would not be contended that the Ship Canal was a tributary of the river Mersey, and its tributaries had any other meaning, but Mr. Sutton contended that its use was really equivalent word stream, as defined by the Rivers Pollution Act, 1876, as when the Local Government Board said river and tributaries, it tended to say streams and to include canals. Could that possibly be so? The Ship Canal was rightly called a canal, not a river or tributary. The Rivers Pollution Act specifically referred to canals and to streams, and gave powers to deal with both canals and rivers as different kinds of "streams." The Local Government Board then appointed a Committee to deal, not with "streams," which would include bodies and collections of water, not with rivers and canals, would have put the question beyond doubt, but with rivers and tributaries. Why was he to say that the Local Government Board meant to say canal, when, with the word before them in the Rivers Pollution Act, and with another word, streams before them, which included canals, they chose to use words which meant something different? This was not a case where the interpretations of the words put on the words caused any failure of justice, for, as he pointed out, not only the Lancashire County Council, but many local bodies, had a right to bring this action, and must have done so if they had done so. There was a reason for Lancashire and Cheshire joining together to purify the Irwell and Mersey, but unless the two counties acted together, nothing satisfactory could be done, and a joint policy was the only possible policy which would succeed. But when they had purified the waters of these rivers they issued in a pure state into the Ship Canal, it seemed the necessity for a Joint Committee was not so apparent. But it was reasonable or unreasonable was not for him to decide. It came to the conclusion that it had not been done; that the Local Government Board neither intended to, nor did in law, give the plaintiffs any jurisdiction over streams other than the particular streams mentioned in the provisional order, and their tributaries, and that the Ship Canal was not included in these words. So practically the whole of the time of the court was taken up in issues which had been decided against the defendants, and which the defendants ought never to have disputed, he ordered that each party pay their own costs.

At a meeting of the Mersey and Irwell Joint Committee on Wednesday, the Clerk was instructed to appeal against the decision.

EXPORTS OF PETROLEUM FROM U.S.

THE Chief of the Bureau of Statistics, Washington, gives the following returns of the exports of petroleum and petroleum products for December, 1894. The total shipments were 83,060,220 gallons compared with 69,277,535 gallons in December, 1893. The total for twelve months ending December 31, 1894, was 894,862,199 gallons against 871,757,017 gallons during the same period in 1893. Details of the shipments are as follows:—

CRUDE PETROLEUM.		Gallons.	
Total December, 1894 ..	..	..	8,140,778
" " 1893 ..	..	..	7,148,309
NAPHTHAS.			
Total December, 1894 ..	..	..	1,565,285
" " 1893 ..	..	..	1,306,577
ILLUMINATING.			
Total December, 1894 ..	..	..	70,043,714
" " 1893 ..	..	..	58,352,607
LUBRICATING AND PARAFFIN.			
Total December, 1894 ..	..	..	3,309,939
" " 1893 ..	..	..	2,468,722
RESIDUUM.			
Total December, 1894 ..	..	..	504
" " 1893 ..	..	..	420

CHEMISTRY (?) IN FICTION.—The chemistry of novelists is always above suspicion; witness the late Mr. Florence, who prussic acid play a lethal role in one of his stories, the acid in question having been stolen from one of the "carboys standing at the drug store." In one of the Christmas stories the "poisonous murderer" was contributed to by a witness having accidentally "a whiff of the strychnine" on applying his nose to the bottle. Note that!—*Morning Post*.

COLOURS are steady, without alteration in prices. Ochres: Oxfordshire, common, £10., medium, £12., best, £15., Derbyshire, common, 40s.; medium, 50s., best, 60s.; Welsh, best, 90s., seconds, 50s., and common, 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Umber: Turkish quiet; Devonshire, 50s. to 55s. White lead, £16. Red lead unchanged. Venetian red, £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2, 2s. 6d. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide, £22. 10s. to £25.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron, dull: Scotch warrants closed at 41s. 4d., Middlesbrough 34s. 3½d. cash, and hematite 42s. 4d. Copper, steady: Chili bars, G. O. B.'s and G. M. B.'s, closed at £39. 8s. 9d. to £39. 13s. 9d. cash, and £39. 16s. 3d. to £40. 1s. 3d. three months. Tin, steady: Straits closed at £59. 15s. to £60. 5s. cash, and £59. 12s. 6d. to £60. 2s. 6d. three months; Australian, £59. 15s. English ingots, £63. to £63. 10s. Lead, quiet: Spanish, £9. 10s. to £9. 11s. 3d.; English, £9. 12s. 6d. Silesian spelter: ordinary, £13. 17s. 6d. to £13. 18s. 9d. Nickel, 1s. 2d. Antimony, dull: £32. Quicksilver: first hands, £6. 10s.; second hands, £6. 9s. Copper shares, quiet: Cape, 1½ to 1⅞; Copiapo, 1⅞ to 1⅞; Libiola, 3¼ to 3½; Mason and Barry, 1¾ to 2; Rio Tinto, 12½ to 12⅞; Tharsis, 4½ to 4¾.

WOLVERHAMPTON, WEDNESDAY.—The severe weather is seriously restricting trade, sellers being unable to guarantee deliveries. Numbers of works unable to obtain fuel are limiting operations. Sellers report slow inquiry for pigs, and rates are without strength. Staffordshire cinder sorts, 35s. to 36s.; good medium sorts, 38s. to 39s., according to mixture. All-mine hot blast, 55s.; Derbyshire and Northampton metal, 37s., minimum. Finished iron steady. Good merchant bars £5. 10s.; common bars £5. upwards. Hoops £6. upwards. Gas ship £5. 5s. Coal strong: forge sorts, 7s. 6d.; furnace, 10s.

GLASGOW, WEDNESDAY.—Market steady, with small business. Scotch done at 41s. 4d. cash, also at 41s. 5½d. and 41s. 6d. one month; closing with buyers at 41s. 4d. cash, sellers ask 41s. 4½d. Cleveland done at 34s. 4d. nine days; closing with buyers at 34s. 3½d. cash, sellers ask 34s. 4d. Cumberland hematite done at 42s. 6½d. one month; closing with buyers at 42s. 4d. cash; sellers ask 42s. 5d. Middlesbrough hematite closes with buyers at 41s. 5d. cash, sellers ask 41s. 7d.

LIVERPOOL MINERAL MARKET.

Since our last the mineral market has been tolerably brisk, and prices much firmer. Manganese imports are nil, and stocks have been rapidly reduced, prices are firm. For ground manganese the demand is increasing, and prices remain steady at £6., £8., £10., and £12. 10s., according to quality. Manganiferous iron ore is unchanged at 16s. to 17s. 6d. per ton, c.i.f., in cargo lots. Bauxite, Irish Hill brand, is selling at 20s. for first quality, 16s. for seconds, and 12s. for thirds, f.o.b. Chrome ore: There are no arrivals to report lately, and there is an absence of stocks; prices are very firm at 70s. for 40% ore, and 115s. for 50% ore. French chalk: Arrivals have not been so numerous, and what has come in has all gone into stock; the demand is good and prices steady. "Angel White" and "Gold Medal" brands 70s., 80s., 90s., and 110s. per ton, according to quality. Barytes is somewhat quiet: carbonate, smalls, 65s. to 75s.; lump, 90/95%, £5. per ton. Sulphate, ground qualities, No. 1 at 65s., No. 2 at 57s. 6d. to 60s., No. 3 at 45s. to 50s.; brown at 40s. Wolfram and scheelite are quiet. Tungsten metal 2s. 3d. per lb. Ferro tungsten 2s. per lb. Magnesite: 35s. to 40s., in cargoes, whilst small quantities from stock, 40s. to 45s.; raw ground, £6.; calcined ground, £10. 10s. to £12. 10s., according to quantity. Plumbago continues in brisk demand at £5. to £6. for founders' purposes, and better qualities at £8. to £10. per ton. Arsenic continues scarce at £15. to £16. 10s. Fullers' earth is steady. Ochre, French J.C., 60s.; other brands according to quality.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

It is understood that the solid paraffin agreement is now at last finally adjusted, as between the Scottish Mineral Oil Companies and the Standard Oil Company of America. The attitude of the British candle-makers remains to be disclosed, and further meetings of these consumers will have to be awaited before there is certainty either for or against. In any case there will be no advance in solid paraffin prices (scale and wax) till April. Owing to the severe and protracted frost, with dense fog frequently, the call for burning oil, *ex contracts*,

has become exceedingly urgent, and for the moment quite overtakes makers' powers of production. Paraffin spirit (naphtha) also is in recovered demand, and has risen a penny per gallon.

Sulphate of ammonia is feeling adversely the severity and backwardness of the season, coupled with the temporary closing up of so many of the Continental outlets. Makers now quote down to from £11. to £11. 5s. prompt, and may go lower.

The general chemicals market is weak, and prices still tend further to the fall. Chlorate of potash is now procurable at 5d., and soda crystals are also a shade cheaper.

Chief prices current are:—Soda crystals, 35s. nett, Tyne; soda ash, 48/52°, £3. 17s. 6d. to £4. 5s. nett, Tyne; white alkali, 48/52°, £4. 10s. to £5. 5s. nett, Tyne; alum in lump, £5. 10s. nett, Glasgow; caustic soda, white, 74° £9., 70/72° £8., 60/62° £7., and cream 60/62° £6. 17s. 6d., all nett, Liverpool; bleaching powder, £7., nett, Tyne; saltcake, 17s. 6d.; borax, English refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 5d. less 5%, Liverpool; nitrate of soda, 8s. 10½d.; sulphate of ammonia, £11. to £11. 5s. prompt, f.o.b. Leith; sal-ammoniac, first and second white, £39. and £37. nett, any port, sulphate of copper, £15. 5s. less 5%, Liverpool; paraffin scale, hard 1½d.; and soft, 1¾d. to 2d. per lb.; paraffin wax 120° semi-refined, 2½d.; paraffin spirit (naphtha), 5d. to 5½d. per gallon; paraffin oil (burning), standard No. 1 grade, 4¼d. at works, for Scotch buyers (English sales, ½d. to ¾d. lower); ditto (lubricating) 865° £4. 5s.; 885° £4. 10s. to £5., and 890/895° £5. to £5. 10s. Week's imports of sugar at Greenock were 9,867 bags beet unrefined.

TYNE CHEMICAL REPORT.

TUESDAY.

There is no change in the position of the chemical market. Prices are practically unaltered. The works are now getting under way with their shipments, which are fairly good in view of the many ports at present closed on account of the severe weather. Sulphur is scarce at £4., and 76/77% caustic is quoted at £9. 15s., and in demand.

Bleaching Powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, nett; caustic soda, 76/77%, £9. 15s. per ton, nett; do., 70%, £8. per ton, nett; recovered sulphur, 2 cwt. bags, £4. per ton, nett; soda ash, 48%, £3. 15s. per ton, nett; do., 52%, £4. 2s. 6d. per ton, nett; do., 56%, £4. 10s. per ton, nett; alkali, 36%, £2. 15s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. 15s. per ton, nett; do., 52%, £5. 5s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £5. 10s. per ton, nett; do., 1 cwt. kegs, £6. 2s. 6d. per ton, nett; silicate of soda, 75° Tw., £2. 17s. 6d. per ton, nett; do., 100° Tw., £3. 12s. 6d. per ton, nett; do., 140° Tw., £4. per ton, nett; soda crystals, casks, £1. 16s. 6d. per ton, nett, gross weight; do., 2 cwt. bags, £1. 16s. 6d. per ton, nett; chlorate of potash, 5½d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £4. 2s. 6d. per ton, nett; blanc fixe, £7. 10s. per ton, nett; chloride of barium, £7. 10s. per ton, nett; carbonate of alumina, £28. 15s. per ton, nett; aluminate of soda, £33. 15s. per ton, nett; in 5 ton lots, £28. 10s. per ton, nett.

SALT.—South Durham salt steady at 9s. 6d. per ton, f.o.b. Tees.

COALS.—There is little or no change to report, prices being the same as last week. The demand is only very poor, so many ports being closed with ice. Best Northumbrian steam, 8s. 9d. to 9s. per ton; second quality, 7s. 9d. to 8s. per ton; small steam, 3s. 9d. to 4s. per ton; gas coal, steady, 7s. to 7s. 6d. per ton. Coke quiet, 13s. to 13s. 6d. per ton.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS are a quiet market, the only noticeable feature being the extreme scarcity of linseed oil, which has jumped up £1. per ton. The imports into Hull during this year, as compared with the same time a year ago, are as follows:—Linseed, 30,875 qrs., against 70,458 qrs.; rapeseed, 18,965 qrs., against 17,238 qrs.; cottonseed, 41,054 tons, against 37,138 tons; olive oil, 1,475 casks, against 2,251 casks; oil-cakes, 2,067 tons, against 5,016 tons; tallow, 2,106 cwt., against 2,904 cwt.; rape oil, 1,448 casks, against 1,163 casks; turpentine, 2,967 brls., against 1,489 brls. Refined cotton oil dull at 15s. 9d. naked spot, March-April quoted 16s., and May-August offer at 16s. 6d. Export of refined, 4,300 cwt. Linseed oil very scarce, and nearly £1. per ton dearer on spot, 20s. 3d. naked having been paid. Same price required for month. Mar.-April offer at 19s. 3d., May-August at 18s. 6d., and September-December, at 18s. 3d. Boiled and refined from £1. to

" 25	Stansbury & Co.	Ceylon, 406	J. Thredder, Son & Co.
" 62	F. W. Heilgers & Co.	" 254	F. Barnes & Co.
" 52	T. Barlow & Bro.		
" 22	Park, Macfadyen, & Co.		
" 32	Dipnall & Co.		
" 8	E. Bower & Co.		
" 50	Thomasset & Co.		
" 72	J. Kenyon & Sons		
" 11	M. Erdmann & Co.		
Madder			
Holland, 1 pkge	City Coml. Wf., Ltd.		
Myrabolams			
E. Indies, 1,000 pkgs.	W. Shelcott		
" 63	L. & I. D. Jt. Co.		
" 300	Dalton & Young		
Orchella			
E. Indies, 37 pkgs.	Arbuthnot, Latham, & Co.		
Saffron			
Spain, 1 pkge	R. Quincey & Son		
" 2	C. Brumlen & Sons		
Shumac			
France, 100 pkgs.	Skilbeck Bros.		
Italy, 40	Hicks, Nash & Co.		
Tanner's Bark			
E. Indies, 1 t.	L. & I. D. Jt. Co.		
Natal, 26	A. & W. Nesbitt		
" 9	Dyster, Nalder & Co.		
Belgium, 2	Sawer, Sons, & Co.		
Valonia			
A. Turkey, 25 t.	Boucher, Mortimore, & Co.		
" 13	Feresford & Co.		
" 95	Honischer & Co.		
" 41	W. M. Mitchell		
" 53	A. & W. Nesbitt		
Holland, 50	Hoare, Wilson, & Co.		
" 50	Hicks, Nash, & Co.		
A. Turkey, 50	J. Graves		
Farina			
Germany, 100 pkgs.	Dunlop Bros. & Co.		
Glucose			
France, 120 pkgs. 120 c.	A. J. Smith		
" 120	J. Barber & Co.		
" 120	L. Norman & Co., Ltd.		
Germany, 5	Beresford & Co.		
U. States, 225	Fuerst Bros.		
" 300	R. G. Hall & Co.		
" 100	Deering & Robottom		
" 700	L. Sutro & Co.		
Infusorial Earth			
Germany, 490	T. H. Lee		
" 35	W. Byford		
Iron Oxide			
Austria, 14 pkgs.	M. D. Co.		
Manure			
1,600 t.	Anglo-Cont. Guano Wks.		
Germany, 50	Perkins & Homer		
France, 60	J. Burnett & Sons		
Germany, 6	Gloy Mfg. Co.		
Methyl Alcohol			
Germany, 10 dms.	Lister & Biggs		
" 8	Stein Bros.		
Molasses			
U. States, 54 pkgs. 326 c.	R. G. Hall & Co.		
Germany, 190	J. Barber & Co.		
Naphthol			
Holland, 4 pkgs.	Phillipps & Graves		
Ochre			
Holland, 10 cs 42 pkgs.	Phillipps & Graves		
France, 83	W. Harrison & Co.		
" 18 cks.	J. Greig		
Paraffin Wax			
U. States, 100 cks.	Prod. Brokers Co.		
" 4,467 pkgs.	Anglo-American Oil Co.		
" 115	G. H. Frank		
Phosphate Rock			
Holland, 19 t.	Fellows, Morton, & Co.		
U. States, 2,950	Anglo-Cont. Guano Wks.		
W. Indies, 364	G. M. Bauer		
Pitch			
Germany, 14 brls.	L. & I. D. Jt. Co.		
France, 200 cks.	W. H. Carey & Sons		
Plumbago			
Ceylon, 50 brls.	Leach & Co.		
Holland, 127	R. G. Hall & Co.		
" 9 cks.	B. Galloway		

LIVERPOOL.

Week ending January 31st.

Acetate of Lime	New York, 1,120 bgs.		
Ammonia	New York, 30 cyldrs.		
Barytes	Bremen, 26 cks.		
	Antwerp, 50 bgs.		
	Rotterdam, 22		
Boracic Acid	Leghorn, 25 cks.		
	12	Pickford & Co.	
Boracite	Panderna, 200 t.	Roberts & Evans	
Caoutchouc	Hamburg, 1 ck.		
Castor Oil	Calcutta, 1,065 cs.	Ralli Bros.	
	247		
Chemicals (otherwise under.)	Baltimore, 28 cks.	W. H. Cole & Co.	
Citric Acid	Bordeaux, 4 cks.		
Colours	Hamburg, 52 cks.		
Cottonseed Oil	New York, 75 brls.		
	Brunswick, Ga., 239		
Dyestuffs			
Cochineal	Gd. Canary, 26 bgs.	J. M. Cerrallos & Co.	
" 9		Kolp & Co.	
" 7		Hesbry & Co.	
" 8		Burrell & Co.	
Cutch	Rangoon, 950 bxs.		
Divi Divi	Rio Hache, 214 t.	E. Brownbill & Co.	
Extracts	Bordeaux, 199 cks.		
	Rouen, 330	Co-op. W'sale Society, Ltd.	
	Antwerp, 16 bxs.	J. T. Fletcher & Co.	
Fustic	Baltimore, 2,047 ps.	Gruning & Co.	
	Tampico, 3,225	Actling & Co.	
" 1,191 drs.		Gruning & Co.	
Indigo	Vera Cruz, 2,447	1,180 lbs. Watson & Co.	
Logwood	Calcutta, 11 chts.	Ralli Bros.	
	223		
Sumac	Vera Cruz, 77 ps.	R. B. Watson & Co.	
Bordeaux	120 bls.		
Palermo	50	720 bgs.	
Valonia	Patras, 100 bgs.	P. A. Gavas	
	" 1,867	C. G. Papayanni & Co.	
" 1,777		G. T. Scrinii	
Syria, 403		Barry Bros.	
Smyrna, 220 t.			
Patras, 50	820	Barff & Co., Ltd.	
Farina			
Trieste, 100 bgs.	Kuchler & Co.		
Havre, 1,172 sks.	Cunard S. S. Co., Ltd.		
Fiume, 150			
Trieste, 100			
Glucose	New York, 100 brls.		
	Bremen, 300 bgs.		
Litharge	Rotterdam, 4 cks.		
Magnesium Ore	Punta Arenas, 300 bgs.	H. Bright	
Mineral	Vera Cruz, 2,738 bgs.	Bessler, Waechter & Co.	
Ochre	St. Nazaire, 60 cks.		
	Bremen, 5		
Paint	Constantinople, 1 cs.		
	Bremen, 1 ck.		
Paraffin Scale	New York, 1,270 brls.		
Phosphates	Antwerp, 76 bgs.		
Phosphate Rock	Brunswick, Ga., 1,998 t.	W. H. Stead & Co.	
Potash	Antwerp, 5 dms. 1 brl.		
Potassium Carbonate	Rouen, 66 cks.	Co-op. W'sale Society, Ltd.	
Pumice Stone	Messina, 25 brls.		
Pyrites	Huelva, 3,615 t.	Matheson & Co.	
Rosin	New York, 1,000 brls.		
Salammoniac	Havre, 75 sks.	Cunard S. S. Co., Ltd.	
Saltpetre	Calcutta, 330 bgs.		
	Hamburg, 100	9 cks.	
Soap	Bari, 103 cs.		
	New York, 50	R. Crooks & Co.	
	Malaga, 17 bxs.		
	Genoa, 250	Pacific S. Nav. Co.	
Soapstone	Bordeaux, 100 bgs.	G. G. Blackwell, Sons & Co.	
	Trieste, 100 bls.	W. Harrison & Co.	
Sodium Nitrate	Caleta Buena, 7,362 bgs.		
Starch	Rotterdam, 22 cs.		
Stearine	Antwerp, 13 bgs.		
Talc	Fiume, 200 bgs.	S. & W. Hoffmann	
" 1		D. G. Cresswell & Son	
Trieste, 100			
Tallow	Rouen, 72 bgs.	Co-op. W'sale Society, Ltd.	
Tartar	Bordeaux, 12 cks.		
Tartaric Acid	Rotterdam, 4 cks.		
Treacle	New York, 10 brls.		
Ultramarine	Bremen, 30 cks.		
Varnish	New York, 10 cs.	J. G. Foster	
Waste Salt	Hamburg, 102 bgs.		
White Lead	Antwerp, 21 cks.		
	Rotterdam, 19		
Wood Pulp	Portland, M., 720 bls.	A Rice & Co.	
	Hamburg, 170	97 pkgs.	
	Rotterdam, 170		
Zinc Ashes	Constantinople, 81 sks.		
Zinc Oxide	Rotterdam, 25 cks.		

MANCHESTER.

Week ending February 2nd.

Acetanillide	Rotterdam, 5 cs		
Albumen	Hamburg, 12 cs.		
Caustic Potash	Treport, 21 dms.	Arnati & Harrison	
Chemicals (otherwise under.)	Rotterdam, 9 cks.	Simpson, Howden, & Co.	
" 4			
Colours	Rotterdam, 15 brls 3 bxs.	Simpson, Howden, & Co.	
	Antwerp, 2 cks.		
	Treport, 11	1 cs. Arnati & Harrison	
Rotterdam, 59	31		

Cream of Tartar— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Dextrin— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Dextrin— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Farina— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Lead Acetate— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Litharge— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Plumbago— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Potash— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Pyrites— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Soda— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Sodium Acetate— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Starch— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Tartar— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Tartaric Acid— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Tin Ferrihydride— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Ultramarine— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Wood Pulp— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Yarnish— Hamburg, 12 lbs. Simpson, Hawden, & Co.
---	---	---	--	--	--	--	--	---	--	--	--	--	---	--	---	---	---

HULL.

Week ending February 2nd.

Alumina— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Alum— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Aniline Colours— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Antimony— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Barytes— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Bone Meal— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Chemicals (otherwise undecorated) Hamburg, 12 lbs. Simpson, Hawden, & Co.	Glucose— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Lead— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Pyrites— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Soda— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Starch— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Tartaric Acid— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Tin Ferrihydride— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Ultramarine— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Wood Pulp— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Yarnish— Hamburg, 12 lbs. Simpson, Hawden, & Co.
---	--	---	--	---	---	--	---	--	---	--	--	---	--	---	---	---

Colours— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Cream of Tartar— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Cryolite— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Dextrin— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Dyestuffs— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Farina— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Glucose— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Infusorial Earth— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Kaolin— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Lead Acetate— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Manure— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Ochre— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Paint— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Phosphate— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Phosphate Rock— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Potash— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Rosin— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Salt— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Soap— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Soda— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Starch— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Stearine— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Tallow— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Tartaric Acid— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Treacle— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Waste Salt— Hamburg, 12 lbs. Simpson, Hawden, & Co.	White Lead— Hamburg, 12 lbs. Simpson, Hawden, & Co.
---	---	--	---	---	--	---	--	--	--	--	---	---	---	--	--	---	--	--	--	--	--	--	---	---	--	--

Wood Pulp— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Acetic Acid— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Acetone— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Aniline— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Arachide Oil— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Barytes— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Barytes Sulphate— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Castor Oil— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Colours— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Dyestuffs— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Alizarine— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Argols— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Bordeaux— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Cutch— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Extracts— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Hayre— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Logwood— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Valonia— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Farina— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Glucose— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Paint— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Paraffin Wax— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Potash— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Rosin— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Salt— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Saltpetre— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Sodium Stannate— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Stearine— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Tallow— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Tannic Acid— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Tartar— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Treacle— Hamburg, 12 lbs. Simpson, Hawden, & Co.	White Lead— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Wolfgram— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Wood Pulp— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Zinc Oxide— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Zinc White— Hamburg, 12 lbs. Simpson, Hawden, & Co.
---	---	---	---	--	---	--	--	---	---	---	--	--	---	--	---	---	---	--	---	---	--	--	---	--	---	---	--	--	---	--	---	--	--	---	--	--

TYNE.

Week ending February 2nd.

Barium Chloride— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Cod Oil— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Colours— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Glucose— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Limestone— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Plumbago— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Soap— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Starch— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Yarnish— Hamburg, 12 lbs. Simpson, Hawden, & Co.	White Lead— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Wood Pulp— Hamburg, 12 lbs. Simpson, Hawden, & Co.
---	---	---	---	---	--	--	--	---	--	---

GOOLE.

Week ending January 30th.

Alkali— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Alum— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Chemicals (otherwise undecorated) Hamburg, 12 lbs. Simpson, Hawden, & Co.	Colours— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Dyestuffs— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Alizarine— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Extracts— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Room— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Ghent— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Fustic— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Madder— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Dyestuffs (otherwise undecorated) Hamburg, 12 lbs. Simpson, Hawden, & Co.	Farina— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Glucose— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Potash— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Pyrites— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Saltpetre— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Soda— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Sodium Silicate— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Zinc Oxide— Hamburg, 12 lbs. Simpson, Hawden, & Co.
--	--	--	---	---	---	--	--	---	--	--	--	--	---	--	---	---	--	---	--

GRIMSBY.

Week ending February 2nd.

Aniline Dyes— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Barytes— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Caoutchouc— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Chemicals (otherwise undecorated) Hamburg, 12 lbs. Simpson, Hawden, & Co.	Colours— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Dyestuffs (otherwise undecorated) Hamburg, 12 lbs. Simpson, Hawden, & Co.	Starch— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Tin Ferrihydride— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Ultramarine— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Wood Pulp— Hamburg, 12 lbs. Simpson, Hawden, & Co.	Yarnish— Hamburg, 12 lbs. Simpson, Hawden, & Co.
--	---	--	--	---	--	--	--	---	---	---

EXPORTS OF CHEMICAL PRODUCTS

OF

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

ending February 6th.

Carbonate—	10 c.	£9
Calcium	19 c.	£20
Chloride—	2 t.	32
tinople,	3 t. 10 c.	£130
am,	2 10	56
	5	10
Sulphate—	2 t. 9 c.	£32
	30	225
	10 c. 3	1,125
	97	1,087
	157	1,727
	4	50
us,	100	1,113
	275	3,181
g,	99	1,127
ous Phosphorus—		
ong,	2 cs.	£27
ma,	1 t. 30 kgs.	£39
p,	3 cks.	9
	10 cs.	£2
Bisulphide—		
am,	4 t. 2 c.	£54
ic Acid Gas—		
na,	19 cs.	£92
Soda—		
ay,	17 c.	£22
	10	17
als (otherwise undes.)—		
rg,	8 c.	£9
re,	5 cs.	15
re,	12 drs.	12
re,	2 cks.	20
on,	4	80
e,	9 cs. 40 kgs.	4
acid—		
am,	10 c.	£63
na,	2 cs.	33
na,	1 ck.	16
rne,	1 t. 5	33
		£151
roducts—		
rine		
na,	2 kgs.	£15
ne Dyes		
a,	1 cs.	£15
ne Oil		
	5 cks.	£50
	12 drs.	300
racene		
am,	78 cks.	£579
ol		
phia,	43 drs.	£124
am,	40 pkgs. 18 pipes	433
olic Acid		
ma,	80 dms.	£178
	130	295
phia,	4 cs.	24
on,	20 drs.	18
ote Oil		
o,	1,000 brls.	£525
htha		
ne,	25 cks.	£60
mn Wax		
	50 bgs.	£100
	20 cs.	27
d'Olonne, 700 t.		£1,300
Kong,	10 cs.	£10
rne,	10 cks. 5	£9
dine Bases		
e,	3 dms.	£66
Sulphate—		
tile,	3 t.	£41
les,	50	80
t,	6	95
rne,	5	80

Corrosive Sublimate—

Lisbon,	1 cs.	£18
Cream of Tartar—		
Sydney,	4 t. 5 c.	£285
Disinfectants—		
Algoa Bay,	9 c.	£17
Trinidad,	12	18
B. Ayres,	5 t. 15	110
Calcutta,	250 drs.	13
Sydney,	6 bgs.	14
Guanine—		
Bordeaux,	3 t.	£30
Demerara,	50	500
Magnesia—		
Melbourne,	2 tanks	£18
Manure—		
Bordeaux,	54 t. 18 c.	£225
Orotava,	3 15	32
Malaga,	598 17	4,008
Colombo,	10	60
Demerara,	12	118
Oporto,	23 1	167
Treport,	9 19	70
Jersey,	170 2	1,329
Morlaix,	260	2,130
Guernsey,	18 17	135
Nitric Acid—		
Sydney,	10 cs.	£45
Oxygen—		
Brussels,	13 c.	£84
Phosphorus—		
St. Cruz de Tenerife,	4 cs.	£4
Oporto,	1	10
Potash Salts—		
Delagoa Bay,	13 t. 17 c.	£2,220
Potassium Chlorate—		
Gothenburg,	5 kgs.	£14
Potassium Chlorate and Sodium Sulphate—		
Colombo,	3 cks.	£11
Potassium Chloride—		
Jersey,	12 t.	112
Potassium Cyanide—		
Townsville,	3 t. 4 c.	£507
Normanton,	1 12	252
Potassium Iodide—		
Melbourne,	1 c.	£61
Potassium Prussiate—		
Yokohama,	5 c.	£23
New York,	12 cks.	355
Genoa,	5 t.	125
Saltpetre—		
Natal,	1 t.	£24
New York,	6 17 c.	164
Valencia,	2 8	54
Sydney,	5	115
Sheep Dip—		
Durban,	1,020 cs.	£1,800
Perth,	104 pkgs.	30
Cape Town,	3 t. 1,000 cs.	1,815
E. London,	506 cs.	885
M. Video,	200	630
B. Ayres,	1,000	3,150
Sodium Acetate—		
Melbourne,	1 t.	£25
Sodium Bicarbonate—		
Durban,	16 c.	£7
Singapore,	3	6
Sodium Nitrate—		
Jersey,	30 t.	£287
Sulphur—		
Calcutta,	3 t.	£19
E. London,	11 17 c.	123
Superphosphate—		
Bordeaux,	17 t. 11 c.	£52
Bilbao,	29 15	100
Valencia,	100	265
S. Kitts,	24 17	5
Mauritius,	96 2	335
Tartaric Acid—		
Yokohama,	1 t.	£94
Fremantle,	4 c.	20
Brisbane,	3	15
Melbourne,	1 15	50
Sydney,	2 5	215

LIVERPOOL.

Week ending February 6th.

Alum—		
Ancona,	3 t.	£21
Portland, M.,	4 9 c. 3 q.	30
Malta,	2 17	13
Halifax,	1 11	7
Smyrna,	7 1	32
Boston,	3 2 3	16
Toronto,	15 4	69
Aleppo,	12 4	55
Lisbon,	5 2 3	23
Aluminous Cake—		
Bilbao,	20 t. 6 c. 1 q.	£81
Ammoniacal Liquor—		
Newport News,	350 brls.	£600
Ammonium Carbonate—		
Portland, O.,	15 c.	£24
Rouen,	1 t. 2	38
Genoa,	1 1	35
Lisbon,	1 10	52
Bilbao,	3	5
Ammonium Chloride—		
Genoa,	6 c.	£7
New York,	5 t. 3	168
Aleppo,	2	72
Calcutta,	3 15	133
Trieste,	2 2 q.	72
Vera Cruz,	5 3	11
Beyrout,	10 1	19
San Francisco,	2 2 1	53
Ammonium Sulphate—		
Barcelona,	20 t. 13 c. 2 q.	£248
Portland, M.,	5 1 2	59
New York,	261 2	3,138
Las Palmas,	20	233
Philadelphia,	66 6 1	763
Passages,	19 11 3	218
Ghent,	50 4 3	580
Newport News,	101 2 3	1,227
Asbestos—		
Rosario,	1 cs.	
Bleaching Powder—		
Baltimore,	83 cks.	
Bilbao,	29	
Boston,	819	
Dunkirk,	19	
Genoa,	85	
Havana,	40 brls.	
Leghorn,	30	
Montreal,	102	
Naples,	40 7	
Newport News,	210	
New York,	491	
Passages,	15	
Philadelphia,	353	
Portland, M.,	20	
Rotterdam,	47	
Ancona,	51	
Calcutta,	63	
Ghent,	94 cs.	
Malaga,	6 7	
Oporto,	6	
Patras,	3	
Rio de Janeiro,	13	
Venice,	7	
Bone Waste—		
Rouen,	6 t. 15 c.	£50
Boracic Acid—		
Rotterdam,	10 c.	£16
Borax—		
Rotterdam,	5 t.	£97
Ghent,	10 2 q.	200
Amsterdam,	1	22
Melbourne,	1 1	22
New York,	4	5
Hamburg,	4 12	98
Calcium Chloride—		
Baltimore,	15 t. 17 c.	£32
Sydney,	5 3	19
B. Ayres,	6 1	14
Boston,	25 12	52
Melbourne,	10	20
Caoutchouc—		
Rangoon,	2 trs.	
Rio de Janeiro,	2 cs.	
Philadelphia,	1	

Carbolic Acid—

Ceara,	1 c.	£8
Sydney,	2 2 q.	5
New York,	9 t. 3	386
Hamburg,	3 2	109
Rotterdam,	10	26
Castor Oil—		
Elmina,	12 cs.	
Caustic Potash—		
Melbourne,	1 t.	£26
Sydney,	1 6 c.	£34
Caustic Soda—		
Antwerp,	10 dms. 26 brls.	
Baltimore,	323	20 cks.
Barcelona,	340	100
Boston,	375	
B. Ayres,	12	
Calcutta,	205	
E. London,	40	
East St. Louis,	300	
Hamburg,	100	
Havana,	40	
Malta,	50	
Milwaukee,	150	
M. Video,	25	
Naples,	37	
Newport News,	600	
New York,	375	
Oporto,	30	
Passages,	20	
Pernambuco,	25	
Philadelphia,	125	
Piræus,	51	
Portland, M.,	35	
Rangoon,	35	
Rouen,	80	
Sagua la Grande,	30	
San Francisco,	100	
San Sebastian,	50	
Valdivia,	38	
Valparaiso,	90	
Yokohama,	255	
Bahia,	10	
Bari,	104	
Bilbao,	200	
Bombay,	31	
Chicago,	200	
Cienfuegos,	15	
Fiume,	238	
Genoa,	137	
Ghent,	8	
La Guayra,	15	
Madras,	20	
Maranham,	3	
Melbourne,	15 pkgs. 10 bxs.	
Penang,	10	
Puerto Cabello,	18	
Rio de Janeiro,	18	
Rotterdam,	15	
Samarang,	8	
Santander,	25	
Savannah,	40	
Seville,	56	50 brls.
Sydney,	5 pkgs. 17	
Tampico,	200	
Trieste,	60	
Venice,	5	
Chemicals (otherwise undescribed)		
Constantinople,	3 t. 5 c.	£119
Philadelphia,	25 12	730
Rotterdam,	2	4
B. Ayres,	8 cks.	62
Yokohama,	7 10	246
Kurrachee,	1 1	38
China Clay—		
Boston,	288 t.	
Maranham,	3 8 c.	
Portland, M.,	38 cks.	
Oporto,	10 bgs.	
Chloroform—		
Portland, M.,	2 cs.	
Rosario,	1	
Chromic Acid—		
Philadelphia,	8 c.	£29
Coal Products—		
Aniline Dyes		
Barcelona,	2 cs. 2 cks.	
Aniline Oil		
Newport News,	8 dms.	
Barcelona,	25 cks.	
Aniline Salts		
Piræus,	2 t. 4 c.	£100
Anthracene		
Rotterdam,	100 brls.	
Creosote Oil		
Lisbon,	150 brls.	

Pitch Alexandria, 100 brls.	La Union Melbourne, 2	Saltpetre— Cabello, 1 t. 14 c. 1 q. £43	Soda Crystals— Alexandria, 30 brls.
Tar Gahoon, 5 cks.	Old Calabar, 50	Portland, O., 1 t. 23	Boston, 336 180 cks
M. Video, 25 brls.	Pt Natal, 50	San Francisco, 1 24	Iquique, 50 52 300 kgs
Tar Oil Boston, 10 dms.	Valparaiso, 16 50 brls.		Montreal, 50 52 70
Tar Salts New York, 5 cks.		Sheep Dip— B. Ayres, 125 cs.	New York, 140 560
Cobalt Oxide— Antwerp, 1 c. £27	Painters' Colours— Bahia, 4 brls.	" 73 l. 14 c. 3 q. £1,924	Pernambuco, 50
Cod Oil— Cape Town, 1 ck.	Baltimore, 200 cks.		Philadelphia, 240
Copperas— Kurrachee, 14 l. £21	Bombay, 48 kgs. 34 cs.	Soap— Accra, 212 bxs	Portland, O., 200 656 kgs
Copper Sulphate— Cetie, 150 t. 2 c. 1 q. £2,175	Ceara, 7	Algoa Bay, 2,615	Rotterdam, 74
Bordeaux, 9 17 3	Constantinople, 4 bxs.	Antwerp, 16 1,200 cs.	Valparaiso, 230 130
Christiania, 6 5 89	Genoa, 1	Bombay, 1,011 34 250 bds.	Gibraltar, 74
Oporto, 13 1 1 89	Lisbon, 1	Cameroon, 25	London, Ont., 50
Venice, 2 6 3 34	Masaya, 5 cks.	C. C. Castle, 25	
Rouen, 52 12 2 783	Melbourne, 38 1	Cape Palmas, 20	Sodium Bicarbonate— Adelaide, 100 kgs. 50 kgs.
M. Video, 4 13 2 74	M. Video, 6 15 1	Cape Town, 382	Algoa Bay, 40
Leghorn, 15 12 2 939	N. York, 1 bx. 5 5 2	Chama, 150	Amsterdam, 50
Barcelona, 25 11 387	Porto Rico, 50	Callao, 6	Antwerp, 22 11 cks.
Boston, 10 1 15	Santiago de Cuba, 1 9	Conakry, 40	Baltimore, 74
Genoa, 12 8 109	Somalia, 6	Delagoa Bay, 245 6	Bombay, 160
Ancona, 2 9 2 604	Calcutta, 6 148	Drewn, 50	B. Ayres, 63
B. Ayres, 47 2	Philadelphia, 71	Dry Harbour, 50	Calcutta, 260
Cream of Tartar— Portland, O., 10 c. £26	Salonica, 5 dms.	E. London, 445 25	Cape Town, 7
Disinfectants— B. Ayres, 12 cs.	San Francisco, 35 6 25	Gibraltar, 20	Copenhagen, 85 32
Flux Skimmings— Bordeaux, 28 pkgs.	Shanghai, 25	Gd. Canary, 530	Dunkirk, 15
Guanos— Malaga, 10 t. £20	Hio, 1 230	Havre, 237	E. London, 40
Tartaruga, 20 175	Havana, 2 c. 30	Kurrachee, 500	Genoa, 20 4
Iron Oxide— Giron, 1 t. 12 c. £49	Potash— Bomlay, 5 c. £24	Lago, 50	Ghent, 20 4
Lime— Lagos, 15 t. 14 c. £17	Potash Salts— Lisbon, 1 t. £80	Malta, 35	Hobart, 50
Cabenda, 11 5	Potassium Bichromate— Antwerp, 8 t. 12 c. £309	Macao, 559	Hong Kong, 7
Magnesia— B. Ayres, 25 cs.	Potassium Chlorate— Rotterdam, 2 t. £212	Mauritius, 1,000	Kurrachee, 681
Manaham, 1	Antwerp, 2 t. 7 c. 407	Mexico, 109	Madras, 25
Para, 2	San Sebastian, 1 2 66	Monrovia, 109	Melbourne, 447
Seville, 12 bds.	Havana, 1 2 33	Naples, 36 8 cks.	Montreal, 150 5
Sydney, 6 pkgs.	Gotenburg, 11 10 394	New York, 378 30	Naples, 40
Magnesium— Rouen, 30 dms.	Hio, 7 10 394	Opobo, 500 20 1	N. Orleans, 500 225
Magnesium Chloride— B. Ayres, 4 t. 2 c. £10	New York, 15 6 650	Para, 200 20 1	New York, 304
Rouen, 10 1 2 q. 184	Leghorn, 1 10 68	Ponce, 50 65	Palermo, 10
Nantes, 21 1 30	Naples, 1 10 68	Pt. Elizabeth, 1,300 10	Para, 230 4 2 cks.
Magnesium Sulphate Seville, 3 t. £13	Vera Cruz, 5 15	Pt. Natal, 100 10	Pt. Elizabeth, 20
Bilbao, 14 c. 2 q. 3	Kalmar, 2 100	Rangoon, 1,000	Rotterdam, 40
Calcutta, 13 brls.	Ystad, 1 10 75	Salt Pond, 250	Rouen, 50 5
Havre, 50 kgs.	Boston, 7 10 338	San Juan, 50 1	Shanghai, 150 4
Paris, 20	Cape Town, 1 42	Sierra Leone, 1 17 tks.	Singapore, 404
Manganese Ore— Hamburg, 5 t. 9 c.	Rosin— Antwerp, 1 kg.	Sydney, 1,480	Sydney, 404
Manure— Hamburg, 320 kgs. £250	Amsterdam, 5 brls.	Zanzibar, 1,580	Syria, 20
St. Malo, 270 t. 9 c. 1,648	Salt— Amsterdam, 180 t.	Alexandria, 335 50	Valencia, 150
Oil— Melbourne, 30 cks.	Antwerp, 245	Barbadoes, 335 1	Venice, 100
Oxalic Acid— Calcutta, 14 c. £23	Baltimore, 200	Bilbao, 1	Vera Cruz, 10
Barcelona, 8 t. 9 180	Barraco, 10	Colon, 25	Wellington, 40
Stockholm, 1 10	Bonny, 10	Gd. Bassam, 40	Yokohama, 1,000 kgs.
Paint— Antwerp, 11 kgs. 2 dms.	Boston, 100	Las Palmas, 450 6	Montego Bay, 20
Bombay, 15 brls.	Copenhagen, 260	Madras, 2	Patras, 100
Buysout, 18 cks. 1 cks.	Delagoa Bay, 5	Pernambuco, 2	Seville, 100 20 brls.
Cochin, 13	Landana, 25	Pinas, 2	
Havana, 12	Mata, 28	Pt. Said, 335 1	Sodium Chlorate— Antwerp, 4 kgs
Malta, 4 bxs. 30	Melbourne, 25 2 c.	Rotterdam, 2	Rotterdam, 60
M. Video, 14	Monrovia, 24 10	St. Nazaire, 40	Hamburg, 20
Newport News, 124	Newcastle, 100	San Francisco, 40	Sodium Oxide— New York, 8 cs.
N. York, 12	Old Calabar, 45 3	Teneriffe, 195	Sodium Silicate— Oporto, 20 brls.
Paris, 1	Opobo, 85 3	Trinidad, 500 1	Sodium Sulphate— Portland, O., 224 brls

Lead—
10 dms.
cone, 50 kgs.
50
Crystals—
8 c. 1 q. £5
ide—
1 t. £18
MANCHESTER.
ending February 7th.

60 kgs.
146 brls.
um—
8 cs.
um Carbonate—
34 kgs.
tinople, 60
Oil—
1 cs.
11 dms.
Salts—
2 pns.
ouc—
4 cs.
ic Acid—
195 btl. 14 cks. 190 dms
3 cks.
Salt—
27 cks
of Lead—
5 cks.
223 t.
um Stannate—
6 cks.
Bicarbonate—
325 kgs.
ic Acid—
laneiro, 13 cs.
10 dms.
10 cks.

HULL.
ending February 2nd.

um Sulphate—
100 bgs.
700
787
500
492
194
10 cks.
ng Powder—
106 cks.
54
64
Soda—
30 dms.
als (otherwise undescribed)
lam, 4 cks. 16 pkgs.
3 2 cs.
100 brls.
nia, 27 5 cs.
agen, 10 30 40
1
50 bgs.
burg, 1 8
rg, 4 404 11
17
32 1
am, 68 60 7
2 4 95
eed Oil—
454 c.
480
23
41
100
rg, 1,347
berg, 100
les, 99
am, 1,335
198

Dyestuffs (otherwise undescribed)

Boston, 5 cks.
Christiania, 1
Hamburg, 1 cs.
Reval, 1
Linseed Oil—
Bergen, 66 c.
Boston, 35
Christiansand, 87
Christiania, 495
Copenhagen, 18
Drontheim, 159
Genoa, 7
Hamburg, 441
Rotterdam, 91
Stavanger, 130
Manure—
Dunkirk, 60 t.
Harburg, 711
Ochre—
Hamburg, 2 cks.
Painters' Colours—
Amsterdam, 3 cks.
Antwerp, 1 pkge. 38 2 cs. 4 dms.
Bergen, 10 10
Christiania, 3 1 8
Copenhagen, 9
Dunkirk, 1
Gotenburg, 23 1
Ghent, 7
Hamburg, 4 pks. 5
Hango, 6
Rotterdam, 7 3
Reval, 12
Rouen, 3 1
Stavanger, 5 5
Pitch—
Antwerp, 241 t.
Naples, 413
Soap—
Copenhagen, 2 cs.
Ghent, 17 c.
Sumac—
Christiania, 28 cks.
Tallow—
Amsterdam, 9 cks.
Gothenburg, 10
Rotterdam, 62
Tar—
Amsterdam, 11 cks.
Copenhagen, 1
Danzig, 6
Hamburg, 6
Rotterdam, 2
Stavanger, 2
Treacle—
Drontheim, 14 cks.
Stavanger, 6
Varnish—
Amsterdam, 3 cs.
Antwerp, 1 brl. 9 cks. 23 dms. 1 bx.
Christiania, 2
Copenhagen, 3
Gothenburg, 1
Hamburg, 1 2
Marseilles, 3
Whiting—
Amsterdam, 7 cks.

GLASGOW.

Week ending February 7th.

Ammonium Sulphate—
Calcutta, 2 t.
Demerara, 510 6 c.
Bleaching Powder—
Melbourne, 23 t. 2 c.
Borax—
Melbourne, 2 t. ¼ c.
Carbolic Acid—
Rotterdam, 6 t.
Castor Oil—
Adelaide, £58
Caustic Potash—
Ballarat, 7 c.
Chloride of Lime—
Demerara, 4 c.
Coal Products—
Alizarine Oil
U.S.A., 3 t. 11 c.
Naphtha
Caen, 22 t. 15 c.
Rouen, 15 2½
Pitch
Amsterdam, 151 t.
Caen, 450
St. Nazaire, 755 18 c.
Coal Products (otherwise undes.)—
Rotterdam, 10 t.

Cod Oil—
Sydney, £23
Adelaide, 1 t. 7 c.
Melbourne, 1 15½
Dyestuffs—
Extracts
Ballarat, 1 t. 11 c.
Melbourne, 3 10¼
Sydney, 1 15¼
Logwood
Melbourne, 10 t. 4 c.
Patent Indigo
Melbourne, 2 t. 7½ c.
Farina—
Barcelona, 2 t.
Glucose—
New York, £171
Linseed Oil—
Trinidad, 1 t. 3¼ c.
Adelaide, 4 11½
B. Ayres, 220 glns.
Melbourne, 1 t. 10

Trinidad, £20
Magnesium Sulphate—
Sydney, 7 t. 17½ c.
Muriatic Acid—
Demerara, 9½ c.
Paint—
Adelaide, £40
Melbourne, 20
New York, 66
Sydney, 11 t. 5¼ c.
Adelaide, 13½
Singapore, 5 12¾
York, W. Aus., 4
Painters' Colours—
Calcutta, £312
Adelaide, 84
Bombay, 214
B. Ayres, 137
Singapore, 199 kgs.
Trinidad, 4 t. 18 c.
Paraffin Wax—
Barcelona, 15 t. 4¼ c.
Valencia, 3 ¾
Monrovia, 2 7
Bombay, 10

Phosphoric Acid—
Demerara, 1 t. 5 c.
Potassium Bichromate—
Ballarat, 8½ c.
Rouen, 27 t. 19¾
Melbourne, 19
U.S.A., 33 8¼
Potassium Cyanide—
Adelaide, 4 t. 6¼ c.
Potassium Prussiate—
Rouen, 11 t. 6½ c.

Soap—
Trinidad, 6 t. 5 c.
Berbice, 1
Demerara, 25
Sodium Bichromate—
Rouen, 13 t. 6¼ c.
Sodium Iodide—
Rotterdam, 10 c.
Tallow—
Rotterdam, 10 c.
Treacle—
Gothenburg, 7 t. 11 c.
Halmstadt, 7 2
Bergen, 6 18
Varnish—
Brisbane, 10½ c.
White Lead—
Sydney, 2 t.
Adelaide, 7 9½ c.
Melbourne, 12
Singapore, 1 6¾

TYNE.

Week ending February 2nd.

Alkali—
Leghorn, 11 t. 18 c.
Rotterdam, 1 1
Antwerp, 6
Alum Earth—
Antwerp, 1 t. 2 c.
Ammonium Sulphate—
Valencia, 20 t.
Antimony—
Hamburg, 2 t.
Rotterdam, 2 10 c.
Antwerp, 1
Copenhagen, 6
Barcelona, 2

Arsenic—
Leghorn, 12 t. 8 c.
Barcelona, 3 18
Barium—
Antwerp, 9 t. 7 c.
Barytes—
Hamburg, 13 t. 5 c.
Bleaching Powder—
Antwerp, 11 t. 3 c.
Drontheim, 10 4
Bergen, 5 7
Christiania, 1 7
Carbolic Acid—
Odense, 9 c.
Copenhagen, 7
Caustic Soda—
Hamburg, 32 t. 1 c.
Genoa, 29
Leghorn, 14 8
Bari, 25 14
Barcelona, 47 19
Bergen, 11
Farina—
Bergen, 4 t.
Magnesia—
Barcelona, 1 t. 10 c.
Manure—
Genoa, 200 t.
Oxalic Acid—
Barcelona, 10 t. 1 c.
Paint—
Bastia, 1 t. 1 c.
Rotterdam, 1 t.
Antwerp, 1 10
Bergen, 10
Soda—
Nakskov, 6 t. 13 c.
Hamburg, 24
Stavanger, 5 3
Christiania, 11 7
Genoa, 5
Antwerp, 7 10
Soda Ash—
Rotterdam, 1 t. 4 c.
Sodium Hyposulphite—
Antwerp, 11 t.
Sodium Silicate—
Leghorn, 7 t. 18 c.
Sodium Sulphate—
Porsgrund, 199 t. 18 c.
White Lead—
Copenhagen, 1 t. 9 c.

GOOLE.

Week ending January 30th.

Benzol—
Boulogne, 48 cks.
Ghent, 8 dms.
Rotterdam, 144
Coal Products (otherwise undes.)—
Boulogne, 25 cks.
Dyestuffs (otherwise undescribed)
Rotterdam, 90 cks.
Hamburg, 14
Painters' Colours—
Boulogne, 1 cs.
Ghent, 1 ck.
Rotterdam, 5 4
Manure—
Dunkirk, 287 bgs.
Ghent, 100
Rotterdam, 785
Pitch—
Antwerp, 609 t.
Rotterdam, 89

GRIMSBY.

Week ending February 2nd.

Caoutchouc—
Esbjerg, 1 bl.
Helsingborg, 4 cks.
Chemicals (otherwise undescribed)
Antwerp, 10 cks.
Hamburg, 2 cs. 6 pkgs. 16 btl.
Coal Products (otherwise undes.)—
Dieppe, 37 cks. 2 cs.
Gothenburg, 5
Painters' Colours—
Hamburg, 1 ck.
Rotterdam, 7 10.

PRICES CURRENT.

WEDNESDAY, FEB. 13th, 1895.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

Acids:—		£	s.	d.
Acetic, 25 % and 40 %	per cwt.	7/-	10/6	
Glacial	per lb.	0	15	0
Arsenic S.G., 2000°	per lb.	0	0	3 1/4
Fluoric	per bottle	0	0	10
Muriatic (Tower Salts), 30° Tw.	per bottle	0	3	0
(Cylinder), 30° Tw.	per lb.	0	0	1 1/4
Nitric 80° Tw.	per lb.	0	0	1 1/4
Nitrous	per lb.	0	0	1 1/4
Oxalic	nett	0	0	3 1/4
Phosphoric, 1750°	per ton	15	10	0
Picric	per lb.	0	0	10
Sulphuric (fuming 50 %)	per ton	5	10	0
(monohydrate)	per lb.	0	0	10
(Pyrites, 168°)	per lb.	0	0	10
(free from arsenic, 145°)	per lb.	0	0	10
Sulphurous (solution) S.G. 1025	per lb.	0	0	10
Tannic (pure)	per lb.	0	0	10
Tartaric	per lb.	0	0	11
Arsenic, white powdered	nett per ton	14	10	0
Alum (loose lump)	per lb.	4	17	6
Alumina Sulphate (pure)	per lb.	4	17	6
Aluminaferric	per lb.	2	7	6
Aluminium	per lb.	0	3	0
Ammonia, Anhydrous	per lb.	0	1	4
" 880=28° B.	per lb.	0	0	3
" 24° B.	per lb.	0	0	2 1/4
Carbonate	nett	0	0	3 1/4
Muriate	per ton	23	0	0
(sal-ammoniac) 1st & 2nd	per cwt.	39/-	37/-	
Nitrate	per ton	41	0	0
Phosphate	per lb.	0	0	10 1/4
Sulphate (grey) London	per ton	11	2	6
(grey) Hull	per ton	11	2	6
Aniline Oil (pure)	per lb.	0	0	5 1/4
Aniline Salt	per lb.	0	0	4 1/4
Antimony	per ton	32	0	0
(tartar emetic)	per lb.	0	0	9 1/4
(golden sulphide)	per lb.	0	0	10
Barium Chloride	per ton	6	10	0
Carbonate (native)	per lb.	3	5	0
Sulphate (native levigated)	per lb.	45/-	75/-	
Bleaching Powder, 35 %	nett	7	2	6
Liquor, 7 %	per lb.	3	10	0
Bisulphite of Carbon	per lb.	11	5	0
Chromium Acetate (crystal)	per lb.	0	0	6
Calcium Chloride	per ton	2	2	6
China Clay (or Bauxite) in bulk	per ton	17/6	to 30/-	
Coal Tar Products and Dyes:—				
Alizarine (artificial) 20 %	per lb.	0	0	8
Magenta	per lb.	0	3	9
Anthracene, 30 % A, f.o.b. London	per unit per cwt.	0	1	1
Benzoic, 90 % nominal	per gallon	0	1	1
50 %	per lb.	0	1	1
Carbazole Acid (crystallized 40°)	per lb.	0	0	5 1/4
(crude 60°)	per gallon	0	1	8
Cresotic (ordinary)	per lb.	0	0	2
(distilled for Lacogen light)	per lb.	0	0	2
Crude Naphthalin 30 % @ 120° C.	per ton	0	0	5
Creosote Oil, 22° Tw.	per ton	2	10	0
Flack, f.o.b. Liverpool or Garmouth	per lb.	1	13	0
Silver Naphthalin, 30 % at 160°	per gallon	0	1	2
Lacogen and Wells Oil	per lb.	0	0	2 1/4
Copper	per ton	39	10	0
Sulphate	per lb.	15	10	0
Crude (copper scales)	per lb.	39	0	0
Glycerine (crude)	per lb.	15	0	0
(distilled S.G. 1.265)	per lb.	40	0	0
Solene	nett, per oz.	0	0	9
Iron Sulphate (crystallized)	per ton	1	5	0
Sulphate (anhydrous)	per lb.	2	0	0
Lead (sheet) for cast	per lb.	10	12	6
Litharge (white) (in sheet)	per lb.	13	10	0
Acetate (white)	per lb.	24	15	0
(brown)	per lb.	15	10	0
Carbonate (white lead) pure	per lb.	16	0	0
Mineral	per lb.	19	0	0
Lime, Acetate (brown)	per ton	5	12	6
(grey)	per ton	9	15	0
Magnesium (ribbon and wire)	per oz.	0	2	3
Chloride (ex ship)	per ton	2	10	0
Carbonate	per cwt.	1	17	6
Hydrate	per ton	17	0	0
Sulphate (Epsom Salts)	per ton	3	0	0
Manganese, Sulphate	per cwt.	2	15	0
Borate	per cwt.	2	15	0
Ore, 70 %	per ton	4	5	0
Methylated Spirit, 61° O.P.	per gallon	0	1	10
Naphtha (Wood), Solvent	per lb.	0	3	0
Miscible, 60° O.P.	per lb.	0	3	0
Oils:—				
Cotton-seed	per ton	18	10	0
Linseed	per ton	22	0	0
Petroleum, American	per gallon	0	0	5 1/4
Stearine	per ton	26	0	0
Phosphorus (yellow)	per lb.	0	2	2
(red)	per lb.	0	2	8
Potassium (metal)	per oz.	0	3	7
Bichromate	nett per lb.	0	0	4 1/4
Carbonate, 90% (ex ship)	per ton	17	5	0
Chlorate	per lb.	0	0	5 1/4
Cyanide, 98%	per lb.	0	1	11
Hydrate (Caustic Potash) 80/85 %	per ton	21	10	0
(Caustic Potash) 75/80 %	per ton	20	0	0
(Caustic Potash) 70/75 %	per ton	19	10	0
Nitrate (refined)	per cwt.	1	2	6
Permanganate	per cwt.	3	0	0
Prussiate Yellow	per lb.	0	0	10
Sulphate, 90 % (ex ship)	per ton	9	15	0
Muriate, 80 % (do.)	per ton	8	7	6
Silver (metal)	per oz.	0	2	3 1/4
Nitrate	per lb.	0	2	10
Sodium (metal)	per lb.	0	3	0
Carb. (refined Soda-ash) 48 %	nett per ton	4	15	0
(Caustic Soda-ash) 48 %	per lb.	4	0	0
(Carb. Soda-ash) 48 %	per lb.	4	0	0
(Alkali) 58 %	per lb.	3	15	0
(Soda Crystals)	per lb.	2	5	0
Acetate (ex-ship)	per lb.	14	5	0
Arseniate, 45 %	per lb.	11	0	0
Chlorate	per lb.	0	0	7 1/4
Borate (Borax)	per ton	30	0	0
Bichromate	per lb.	0	0	3 1/4
Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton	per ton	10	0	0
(74 % Caustic Soda)	per ton	8	15	0
(70 % Caustic Soda)	per ton	7	15	0
(60 % Caustic Soda)	per ton	6	15	0
(60 % Caustic Soda, cream) (f.o.b.)	per ton	6	15	0
Bicarbonate	per lb.	6	10	0
Hyposulphite	per lb.	5	10	0
Manganate, 30%	per lb.	16	0	0
Nitrate (95 %) ex-ship Liverpool	per cwt.	0	8	9
Nitrite, 98 %	per ton	29	0	0
Phosphate	per lb.	15	0	0
Silicate (glass)	per ton	5	2	6
(liquid, 100° Tw.)	per lb.	4	5	0
Stannate, 40 %	per cwt.	3	2	9
Sulphate (Salt-cake)	per ton	0	17	6
(Glauber's Salts)	per lb.	1	5	0
Sulphide	per lb.	8	10	0
Sulphite	per lb.	5	7	6
Strontium Hydrate, 100%	per lb.	3	10	0
Sulphocyanide Ammonium, 95 %	per lb.	0	0	7
Barium, 95 %	per lb.	0	0	5
Potassium	per lb.	0	0	7 1/4
Sulphur (Flowers)	per ton	7	5	0
(Roll Brimstone)	per lb.	5	5	0
Brimstone: Best Quality	per lb.	3	15	0
Superphosphate of Lime (26 %)	per lb.	2	7	6
Tallow	per lb.	26	0	0
Tin Crystals	per lb.	0	0	6
English Ingots	per lb.	6	10	0
Zinc (Spelter)	per lb.	13	17	6
Chloride (solution, 100° Tw.)	per lb.	5	7	6

THE CHEMICAL TRADE JOURNAL

AND
OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

405.

SATURDAY, FEBRUARY 23, 1895.

Vol. XVI.

Contents.

PAGE	PAGE
Topics	129
Editorial Jottings	130
Intelligence	130
Carbon Battery	131
Grinding Mill	132
Companies	132
.....	132
Ammonia Products	133
Chemical Market	133
Manure Material	133
Oil and Colour Market	133
The Metal Market	133
West of Scotland Chemicals	133
Tyne Chemical Report	133
Hull Paint, Oil, and Colour Report	134
New Companies	134
The Patent List	134
Gazette Notices	134
Imports	135
Exports	137
Prices Current	140

 **FOR INDEX**
VOL. XV., SEE
INSIDE.

ADVERTISEMENTS.

ARGON.

Number of PFLÜCKER'S VACUUM TUBES,
each 7s. 6d. each post free, containing PURE ARGON, are to be had from
J. L. L. AND CO., 148, HIGH HOLBORN, LONDON, W.C.

Position Wanted; manufacturing and general
technical experience, chemico-mechanical; accustomed to control, reorganisa-
tion, etc. Rapid grasp of new subjects. Business capacity. Good
—Z, 18, Noel-street, Islington, London, N.

Notices.

Communications for the *Chemical Trade Journal* should be
sent to the Editor, and Cheques and Post Office Orders made payable to—

VIS BROS., 32, Blackfriars Street, MANCHESTER.

Our Registered Telegraphic Address is—

"Expert, Manchester."

Terms of Subscription, commencing at any date, to the
Chemical Trade Journal,—payable in advance,—including postage
all over the world, are as follows:—

Early (52 numbers) 12s. 6d.
Half-Yearly (26 numbers) 6s. 6d.
Quarterly (13 numbers) 3s. 6d.

Communications for the Editor, if intended for insertion in the
next week's issue, should reach the office not later than **Tuesday**
evening.

CURRENT TOPICS.

THE SALT UNION.

AN inquest was held at Marston, Northwich, as we were
going to press last week, regarding the death of Thomas
Davies, a rock miner in the employment of the Salt Union,
Limited, which occurred under remarkable circumstances.
The evidence showed that Littler, a fellow-miner, undertook,
at the suggestion of Mr. Thomas Rayner, divisional manager
of the Union, to obtain a sample of brine from a newly-made
shaft in the neighbourhood belonging to Mr. H. I. Thompson,
respecting which there had been litigation between the owner
and the Salt Union. Littler and three other miners, includ-
ing Davies, proceeded about one o'clock on Tuesday morning
to Mr. Thompson's premises. Davies volunteered to descend
with a bucket by means of a "horse" or "chair" used by
miners; but while attaching the eye of the "chair" to a hook
on the pit rope he lost his balance and fell to the bottom of
the shaft, a distance of 150 feet, dislocating his neck. The
Coroner said that a very grave moral, if not legal, respon-
sibility rested upon Mr. Rayner, the manager, for the part
he had taken in the affair. The jury found that Davies met
his death while stealing brine, and that the accident occurred
through undue haste in preparing to descend the pit, caused
by his knowledge of the unlawfulness of the act; and they
expressed a hope that the parties engaging the man would
compensate the widow for the loss sustained.

It is a pity the Board of Directors of the Salt Union allow
their managers to stoop to such nefarious practices as these;
and it is a further pity that money which should find its way
into the shareholders' pockets should be spent in promoting
petty jealousies between managers of works, both past and
present. The Salt Union has no future before it; if anyone
thinks otherwise, let him go down to Marston and see for
himself.

STANDARDS FOR SEWAGE PURIFICATION.

Chemical manufacturers and others who are likely to be
affected by the prevention of river pollution, will do well to
note that after protesting for so long that it was impossible
to fix a standard of purity, the Mersey and Irwell Joint
Committee have changed their ground and taken upon them-
selves the establishment of a certain limit of impurity for
sewage effluents. Knowing the difficulties of fixing an un-
alterable numerical standard, the River Pollution Com-
missioners only ventured so far as to recommend certain
limits of impurity in the matter of solids and such like.
The Joint Committee have, however, advanced further into
the unknown, and elected to judge the quality of effluents by
comparison with an imaginary effluent which would give upon
analysis not more than 0.1 grain per gallon of albuminoid
ammonia, 0.25 grains of absorbed oxygen by 15 minutes test,
and 1.0 grain by the three hours acid permanganate of

potassium test. We shall not waste time by discussing these standards, since they are virtually worthless, the principle of their adoption being hopelessly futile in theory and practice.

When originally introduced by the Joint Committee, about three months ago, they were referred to in these columns as tentative standards, which had been merely adopted as a means of comparing the results of a number of analyses of effluents which were then presented to the Committee. Since then, however, they have been put to other and more significant use, which shows that the Committee intend virtually to adopt them as their working paradigm. Manufacturers should therefore see how they stand, since they have to bow to the present powers that be, so as to avoid, if possible, further complaints about the quality of their effluents, as there is nothing to prevent the standards adopted for local authorities being employed more or less as tests for manufacturers' effluents.

ADVERTISING IN EXCELSIS.

An important case has recently been settled in the House of Lords affecting the definition of what is and what is not a legitimate method of advertising. Briefly stated, the case was one in which a pharmaceutical retailer sold on commission a certain patent infants' food. The retailer was also the proprietor of a similar food, though differently prepared. With a view to pushing his own proprietary article, the retailer was in the habit of attaching a label to the food he sold on commission, stating that his own particular preparation was the most healthful and nutritious. In this way, though bound to supply the particular food demanded by purchasers, he probably succeeded in creating in their minds a doubt as to whether their selection was the best, thus predisposing them to make a trial of his own food. The makers of the food sold on commission sought to obtain an injunction, as the practice was detrimental to their business. After judgment being given, first in favour of the retailer and then against him, the case has been finally settled in his favour, their lordships holding that there was no legal redress for such a practice any more than it was possible for a bootmaker to obtain an injunction against another maker for stating that his boots were the best in the world. This decision is likely to have an important bearing upon future cases, involving the same principle, in connection with very different articles. The arguments on which the judgment is based are also instructive, and well worth perusal, for which purpose they are elsewhere recorded in this issue.

WOOD PULP via THE CANAL.—During the week ending February 16th, the imports of wood pulp into Manchester exceeded those into any other port in the United Kingdom. 5760 Bales arrived from Fredrikshald, 5,045 bales from Drammen, and 54 bales from Antwerp, a total of 10,859 bales. During the same period 11,617 bales entered the port of London, but as of these 8,211 were small bales of Canadian pulp, weighing only 1 cwt. each, as compared with 2½ cwt. to 4 cwt. (the weight of Scandinavian bales such as come to Manchester) the total weight represented is considerably less. The imports into other British ports were:—Fleetwood, 3,960 bales; Grangemouth, 3,304 bales; Hull, 2,144 bales; Leith, 124 bales; Glasgow, 186 bales; Granton, 342 bales; Liverpool, *nil*. There seems to be little doubt that the Ship Canal will ultimately secure a larger share of the trade in this commodity than any of its rivals, and but for the depressed state of the paper making industry at present imports would be considerably larger than they are. On Wednesday afternoon, the *s.s. Borregard* arrived in the Canal with 7,046 bales sulphite pulp, besides a quantity of pulp wood, from Sannesund. This cargo, amounting to 1,000 tons, is from the Kellner-Partington Pulp Works, situated at Borregard, Norway, and will be followed by regular shipments over the year. This firm are the largest manufacturers of sulphite pulp in Scandinavia.

Parliamentary Notes.

"NODDLING" DYED YARNS.

In the House of Commons, on Monday, Mr. Knowles asked Home Secretary if his attention has been called to the injury to health resulting from the practice of "noddling," or adulterating yarn with lead products for the purpose of increasing its weight. This practice was covered by the inquiry of the Local Industries Departmental Committee; and if any special rules applicable to it have been framed under section 8 of the Factory Act, 1891.

Mr. Asquith: I am informed that the practice of "noddling" consists in stretching hanks of yarn on pegs, and then combing the portions previous to their being twisted, pressed, and packed; that in noddling yarn which has been dyed a yellow or orange colour and which has been passed through a mixture of acetate of lead and bichromate of potash (not for the purpose of adding to its weight in order to produce those colours) a good deal of fibre and lead is given off, with consequent risk of injury to the health of the men and girls employed. Dyeworks were not included in the reference of the Departmental Committee on White Lead Industries, but by direction special inquiries are being made by the inspectors of factories throughout the United Kingdom as to what manufacturing processes in the various trades are dangerous to the health of the workers with a view to the issue of special rules when necessary; and, among others, the process referred to in the question has been noted for special attention.

Legal Intelligence.

HOUSE OF LORDS.

(Before the Lord Chancellor and Lords Watson, Macnaghten, Morris, and Shand.)

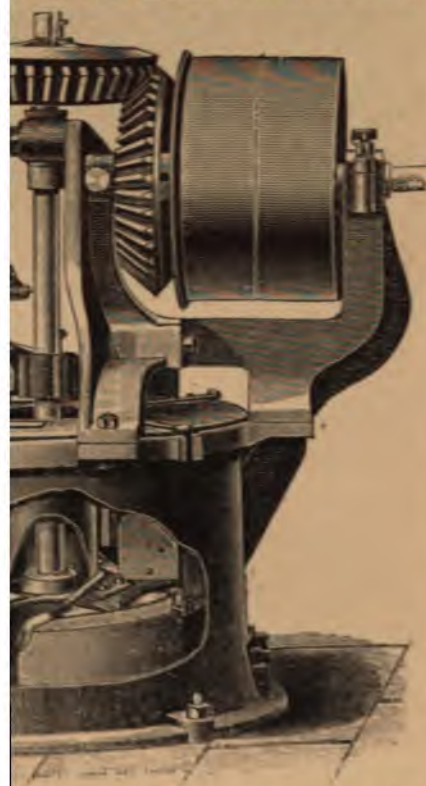
WHITE v. MELLIN.

This was an appeal from an order of the Court of Appeal reversing the decision of Mr. Justice Romer. The respondent in the present case, Mr. Gustav Mellin, is the proprietor and manufacturer of a food for infants known as "Mellin's Infant Food." The appellant, Timothy White, is a chemist, carrying on business in Portsmouth in the neighbourhood, and has been in the habit of selling, amongst other articles, the respondent's food. Besides carrying on the business of a chemist, the appellant is also the proprietor of another food, which he called "Dr. Vance's Food for Infants and Invalids," and when selling the respondent's food to customers he has been in the habit of pasting upon some of the wrappers of the packets of Mellin's Food as well as upon other articles he sold labels of his own containing the following:—"Notice. The public are recommended to try Vance's Prepared Food for Infants and Invalids, it being far more nutritious and healthful than any other preparation yet known." This fact becoming known to the respondent he instituted proceedings in Chancery for an injunction to restrain the appellant, amongst other things, from selling his food otherwise than under the original labels and wrappers. The matter came before Mr. Justice Romer, who granted the injunction with costs. The Court of Appeal, however, set aside the judgment and ordered a new trial. Hence the present appeal.

The Lord Chancellor, in giving judgment, said there could be no doubt the respondent was annoyed by what the appellant had done, but the question was whether the act complained of amounted to an actionable wrong. Mr. Justice Romer, when he dismissed the respondent's application, expressed his opinion that the advertisement or label was a "puff" by the appellant of his particular goods, and that his conduct did not amount to a trade libel, and, therefore, did not give rise to any legal claim to the respondent for an injunction or damages. The Court of Appeal were not satisfied with the evidence that had been given, and Mr. Justice Romer having decided the case on the respondent's evidence, they ordered a new trial in order that the appellant's evidence should be heard. The learned judges of the Court of Appeal seemed to be of opinion that in order to maintain the action the respondent must prove that the appellant had disparaged the respondent's goods, and that such disparagement had caused and resulted in damage to the respondent. The only statement made by the appellant was that his food was more nutritious and healthful than any other article of that kind offered to the public. That was a general statement applicable to the respondent's food alone, but to all other foods of that kind in the market. By attaching his own label to the respondent's goods it might be said that the appellant disparaged those goods by saying that they were not as good as his own. That gave rise to the question—Had the respondent proved that this disparagement had injured or was reasonably calculated to injure the respondent's goods?

BALL GRINDING MILL.

of machines in the market nowadays which the old burrstones and such-like grinding latest and simplest mills is that being introduced by Mr. C. E. Hall, of 55, Norfolk-street, is extremely simple, and consists of a circular bowl inside, against which six steel balls are placed in a separate compartment, which against the ring, when a speed of 200 revolutions. Thus the ball has a free movement of a



to crush the materials thrown between it and the arms are a series of fan blades, which from the grinding path, and throw it against the ring, through which it passes into a hopper. The power required to work this machine is between 8 and 10 h.p., with an output of about a 60-mesh sieve. From the tests and experience from users, we should say this mill is ideal for grinding slurry.

of Companies.

WIGAN COAL AND IRON CO., LD.

of the Wigan Coal and Iron Company, on December 31st last, states that the output was restricted owing to the small demand for coal, but, fortunately, been working very short time, of vending the fuel at reasonable prices. The works have worked such short time since the formation of the early part of the year, prices were still high, and they soon began to fall, and the fall has continued. The demand for both iron and steel has been very low, and prices quite unremunerative. A charge of depreciation. The works have been in a high state of efficiency. Nothing has been done during the year. The debenture debt has been paid off. The profit of £82,923, on the whole operations of the year. The sum of £2,130, was brought forward. The sum of £85,053. The

Directors recommend a dividend at the rate of 4 per cent. per annum. An instalment at the rate of 4 per cent. per annum on account of anticipation of the dividend for the year 1894 was paid in August for the six months ended June 30, 1894, absorbing £36,195. The sum is now required to make up the dividend of 4 per cent. on the whole year, making together £72,389, leaving to be carried forward the sum of £12,664.

THE SANITAS CO., LD.

The directors of this company have decided to write off to the credit account £1,875, and recommend the payment of a final dividend of 5 per cent., together with a bonus of 3¼ per cent., making total distribution for the past year of 13¼ per cent. The sum of £12,664 is to be carried forward.

Trade Notes.

THE SOLID PARAFFIN COMBINE.—The candle makers decided to combine amongst themselves and with the Scotch producers of solid paraffin. A number of unwilling firms have omitted in forming the union, which is the weak point in the scheme. On Wednesday, at a general meeting of candle makers, it was decided to raise the price at once 6d. per dozen lbs., thus making candles 13s. 6d. per ton. This advance is to affect all forward, as well as immediate, sales.

PERSONAL.—We are informed that a Relief Fund has been opened by a Committee in Leeds, to which Mr. E. A. Brotherton, of Messrs. Brotherton and Co., has contributed £50.

GOLD PRODUCTION.—The Simmer and Jack Gold Mining report that the last month's crushing yielded 4,082 ounces of gold, 398 ounces of gold by chlorination, and 2,595 ounces of gold tailings by cyanide.

THE MANCHESTER CHAMBER OF COMMERCE CHEMICAL COMMITTEE.—This Committee has undertaken to investigate and to report upon cases of lead poisoning in the preparation of dyes (chrome colours), with the view of suggesting, if possible, the substitution of materials which would produce the same brilliant effects without risk of harm to those engaged in the preparation of the dyes.

MIXING BEER.—At the Lancashire County Police Court last week before Mr. J. M. Yates, Q.C., Sydney G. Collins, of The Boathouse, Irlam, was charged at the instance of the Inland Revenue authorities with diluting beer. Mr. G. Dennis, who prosecuted, stated that the offence was committed prior to the decision in the last case before the court. The circumstances were almost similar to those in the previous prosecutions. The defendant was found using what was known as "union." Samples were taken which, on analysis showed a dilution equal to 3 7-10ths gallons in the barrel.—Mr. Hislop, on behalf of the defendant, admitted that a "union" was used.—Mr. Yates said:—had this offence been committed after the warning he gave he should have inflicted a severe penalty, but under the circumstances he will inflict a fine of 20s. and costs.

"PREPARED" COCOA.—At Westminster Police Court, London, Monday, before Mr. de Rutzen, a shopkeeper named David Jones Dorset-street, Westminster, was summoned by the Westminster Vestry for selling adulterated cocoa. Mr. Warrington Rogers appeared for the parish; and Mr. J. D. Langton defended. The inspector's agent asked for a quarter of a pound of cocoa at 1s. a pound, and was served with a compound containing nearly 50 per cent. of starch and sugar. Mr. Langton elicited—though attention was not called to the fact the time of purchase—that the box from which the sample was taken was labelled "chocolate powder." Mr. Langton asked the witness whether he wanted cocoa as an article of food. Witness said he did not. Mr. Langton.—Are you aware that cocoa in its original state contains 50 per cent. of fat, and that it is impossible to use it with water? Witness said he knew that manufactured cocoa had a proportion of fat removed. Mr. Langton said it was decided the other day in the Court of Queen's Bench that a cocoa preparation might be sold as cocoa. If they accepted 80 per cent. of starch and sugar in the preparation he did not see why a small trader should be fined. John Chapman, manager to Messrs. Collier, the manufacturers supplying the defendant, said that cocoa in its natural state was not sold as an article of food. Sugar and sago were usually added. Mr. de Rutzen.—There is no such thing as pure cocoa? Witness.—Yes. Mr. de Rutzen.—Altho' yours is a good deal better—in your opinion? (Laughter.) Witness.—Yes. Mr. de Rutzen.—There will only be a fine of 10s. and 14s. costs.

Market Reports.

TAR AND AMMONIA PRODUCTS.

There is a slight improvement in benzols, the market being steadier: 's and 90's are both quoted 1s. 1d. Carbolic acid keeps quiet: quotations for crude and crystals continue unaltered, but it is difficult to find buyers above 1s. 6½d. for 60% crude, and 5¼d. for crystals. Crude naphtha is dull at 5d., while solvent remains flat at 2d. Anthracene and creosote are without change. Pitch is fairly steady at 35s., f.o.b. East Coast and 34s. forward.

Sulphate of ammonia, though quiet, is in a fairly satisfactory position. "Bears" are making the most they can of the accumulation of stocks, which is inevitable with the season so backward, but there are sufficient signs of activity to reassure makers in holding till the market improves. Representative quotations may be taken as:—London 11s. 2s. 6d., Liverpool 11s. 3s. 9d., Hull 11s. 2s. 6d. to 1s., and Leith 11s. 1s. 3d. to 11s. 2s. 6d. Next month 11s. 5s.

MISCELLANEOUS CHEMICAL MARKET.

The alkali trade the demand for export continues fairly active both for ash and caustic soda, and prices have undergone no alteration this week. Current quotations for caustic soda on spot are still unaltered, viz.:—F.o.b. Tyne, 77%, £10.; f.o.b. Liverpool, 74%, £8. 15s.; 67%, 15s.; 60%, £6. 15s. nett per ton, 10-ton lots and upwards. Soda ash, 58%, is without change, either for prompt or forward delivery, but further curtailments of output are spoken of. Soda ash is difficult to sell, and low prices are still ruling. Chlorate of soda is again weaker, and can be bought at 4¾d. Chlorate of soda is at 6½d. per lb. Bleaching powder is fairly active, and a change in price, at £7. 2s. 6d., f.o.r. makers' works, 7. 5s., hardwoods, f.o.b. In sulphate of copper there is a considerable amount of business doing at £15. 10s., f.o.b. Acetates are, meantime, without further change since last reported, and there is no improvement in any of the acetates or acetic acid. Potash is again lower at 9½d. to 9¾d. per lb., with only a small demand. Prussiate of soda 7½d. to 7¾d. Potash, caustic, carbonate, are in strong demand, and available stocks are small: white, 90/92°, selling at £17. to £17. 10s. nett, c.i.f. White arsenic continues scarce, and price firm at £14. 7s. 6d. to 10s. Carbolic crystals are without improvement in value, and are holding off meantime. Ammonia salts are fairly good all in respect of values. In borax and boracic acid prices still rule and apparently without prospect of any early improvement. Zinc is in better request. Sulphate of iron also finds more ready sale and prices generally are higher.

REPORT ON MANURE MATERIAL.

There has been more doing during the week, but without much change in values.

Quotation for 75/80% Florida phosphate rock remains 7½d. to 7¾d. for 10 tons, c.f. and i. to United Kingdom, 1895 steamer shipment.

For Peace River rock 6½d. per unit is still asked; for South River rock 6¼d., and for 60/65% Algerian 6¼d.; but for lines a fraction less in each case would probably be business.

Plate bones are not much inquired for, and £4. 5s. per ton, United Kingdom, is probably now full value. Crushed bone bones offer, ex quay and for shipment, at £4. 7s. 6d. per ton. Blue of Bombay bone meal on spot is £4. 7s. 6d. per ton, but for 2s. 6d. less would no doubt be accepted.

Sulphate of soda is unchanged on spot, but in the forward position some improvement. On spot ordinary quality may be had at 1d. per cwt., but for good to refined 8s. 9d. to 9s. would have to be asked. Due cargoes: Hamburg market much firmer, and 8s. 10½d. is now asked.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

S.—Palm oil is firm, holders asking more money for certain lots. No very great amount of business, however, is to be reported.

Olive continues firm, prices being well maintained, and the market moderate. Linseed keeps steady, at 21s. 9d. to 22s. per cwt. Liverpool makes in export casks. There is a firmer tone in seed, Liverpool refined being quoted 18s. to 18s. 6d. per cwt.

in export barrels. The volume of business passing in castor oil is but small, being chiefly of a retail character. Prices, however, keep fairly steady, with good seconds Calcutta 2½d., and first pressure French 2d. to 2½d. per lb. The demand for tallow is improving, and in consequence, the market is firm, and prices steady. Resin is in fairly good demand at full prices, especially for common. The demand for spirits of turpentine still keeping satisfactory, holders are not disposed to sell at less than 22s. to 22s. 3d. per cwt. Petroleum is firm, with American 4¾d. to 6d., according to quality, and Russian refined 4¼d. per gallon.

THE METAL MARKET.

LONDON, WEDNESDAY.—Pig iron, quiet: Scotch warrants closed at 41s. 3½d., Middlesbrough 34s. 4d. cash, and hematite 42s. 4½d. Copper, dull: Chili bars, G. O. B.'s and G. M. B.'s, closed at £39. 11s. 3d. to £39. 16s. 3d. cash, and £39. 18s. 9d. to £40. 3s. 9d. three months. Tin, easier: Straits closed at £61. to £61. 10s. cash, and £61. 2s. 6d. to £61. 12s. 6d. three months; Australian, £61. 5s. English ingots, £64. 1s. to £64. 10s. Lead, quiet: Spanish, £9. 11s. 3d.; English, £9. 12s. 6d. Silesian spelter: ordinary, £14. Nickel, 1s. 2½d. Antimony, £31. 15s. Quicksilver: first hands, £6. 10s.; second hands, £6. 9s. Copper shares, firm: Cape, 1½ to 1½; Copiapo, 1½ to 1½; Libiola, 3¼ to 3½; Mason and Barry, 1¼ to 2; Rio Tinto, 13 to 13½. Tharsis, 4¾ to 4¾.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

Sulphate of ammonia has continued to droop slowly; as low as £11. has been accepted for spot delivery, and that applying to a specially good quality. Up till to-day, nothing is known of any actual business at lower money; but the deadness of inquiry owing to the weather, and the poor reports from the Continent as to prospective requirements there, point to a further declension. Under the circumstances makers and middle holders are wonderfully stiff, as if believing in the venture of a waiting game.

General chemicals are still weak with some fractional lowering of value, as noted below. It is announced that two of the Scotch alkali works of the United Alkali Company have been reopened, after being for some months shut. The closing had been accepted locally as a permanency, and the reversion is uncommonly welcome.

Mineral oils and paraffins are unchanged. The Scotch-American agreement awaits the decision of the candle-makers at their meetings in London this week. One condition granted by the Scotch Companies is that they will desist from pushing the burning oil flash-point agitation.

Chief prices current are:—Soda crystals, 35s. nett, Tyne soda ash, 48/52°, £3. 15s. to £4. 5s. nett, Tyne; white alkali, 48/52°, £4. 10s. to £5. 5s. nett, Tyne; alum in lump, £5. 10s. nett, Glasgow; caustic soda, white, 74° £9., 70/72° £7. 15s., 60/62° £6. 15s., and cream 60/62° £6. 15s., all nett, Liverpool; bleaching powder, £6. 10s. to £7., nett, Tyne; saltcake, 17s. 6d.; borax, English refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4¾d. nett, f.o.b. Glasgow); bichromate of soda, 3¾d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 5d. less 5%, Liverpool; nitrate of soda, 8s. 10½d.; sulphate of ammonia, £11. prompt, f.o.b. Leith; sal-ammoniac, first and second white, £39. and £37. nett, any port, sulphate of copper, £15. 5s. less 5%, Liverpool; paraffin scale, hard 1¾d.; and soft, 1¾d. to 2d. per lb.; paraffin wax 120° semi-refined, 2½d.; paraffin spirit (naphtha), 5d. per gallon; paraffin oil (burning), standard No. 1 grade, 4¾d. at works, for Scotch buyers (English sales, ½d. to ¾d. lower); ditto (lubricating) 865° £4. 5s.; 885° £4. 10s. to £5., and 890/895° £5. to £5. 10s. Week's imports of sugar at Greenock were 9,265 bags beet unrefined, and 600 bags beet refined. During the week the *Castloch*, bound for Greenock with about 1,800 tons cane sugar in baskets, went on the rocks of Arran. Cargo a total loss.

TYNE CHEMICAL REPORT.

TUESDAY.

Chemicals are now in more regular delivery, but there is little or no alteration in prices to report. Sulphur scarce at £4. 76/77% caustic £9. 10s. to £9. 15s. Soda crystals £1. 16s. 6d. per ton locally.

Bleaching Powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, nett; caustic soda, 76/77%, £9. 15s. per ton, nett; do., 70%, £7. 15s. per ton, nett; recovered sulphur, 2 cwt. bags, £4. per ton, nett; soda ash, 48%, £3. 15s. per ton, nett; do., 52%, f.o.b. 2s. 6d.

per ton, nett; do., 56%, £4. 10s. per ton, nett; alkali, 36%, £2. 15s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. 15s. per ton, nett; do., 52%, £5. 5s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £5. 10s. per ton, nett; do., 1 cwt. kegs, £6. 2s. 6d. per ton, nett; silicate of soda, 75° Tw., £2. 17s. 6d. per ton, nett; do., 100° Tw., £3. 12s. 6d. per ton, nett; do., 140° Tw., £4. per ton, nett; soda crystals, casks, £1. 16s. 6d. per ton, nett, gross weight; do., 2 cwt. bags, £1. 16s. 6d. per ton, nett; chlorate of potash, 5½d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £4. 2s. 6d. per ton, nett; blanc fixe, £7. 10s. per ton, nett; chloride of barium, £7. 10s. per ton, nett; carbonate of alumina, £28. 15s. per ton, nett; aluminate of soda, £33. 15s. per ton, nett; in 5 ton lots, £28. 10s. per ton, nett.

SALT.—South Durham salt steady at 9s. 6d. per ton, f.o.b. Tees.

COALS.—Trade is wretchedly dull, and unless shipping facilities improve rapidly, several important collieries in Northumberland and Durham will only be working very short time. The only coal for which there is any demand is gas, the consumption being much above the average. Prices to-day are as under: Best Northumbrian steam, 8s. 9d. to 9s. per ton; second quality, 7s. 9d. to 8s. per ton; small steam, 3s. 9d. to 4s. per ton; gas coal, firm, 7s. 3d. to 7s. 6d. per ton; household coals, 10s. to 11s. Coke quiet, 13s. to 13s. 6d. per ton.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—At last the frost, which has been so protracted, is rapidly giving way to weather more suited to the industries here. Many firms have been, and are, running short time at a period when they should have recouped. The Anglo-American Oil Company notify to the trade here an advance in some classes of mineral oils of from 5s. to 7s. 6d. per ton. The import of linseed for the week has been 6,286 qrs. Linseed oil has been inactive, no doubt owing to buyers holding off for lower prices; still the advance of £1. per ton has been fairly well maintained. Market closes quiet at 20s. 3d. naked spot or month; March-April, 19s. 1½d.; May-August offers at 18s. 4½d.; and last four months at 18s. 3d. Boiled and refined from £1. to £2. per ton extra. Export for the week has been 1,420 cwt. The import of cottonseed during the week has been 4,970 tons from Alexandria, and 1,650 tons from Mersyne. Refined cotton oil quiet at 15s. 7½d. naked spot; March-April offer at 16s., and May-August at 16s. 6d. per cwt.; ordinary barrels 25s., and casks 17s. 6d. per ton extra. Export of refined, 7,740 cwt. Spirits of turpentine, 22s. per cwt., a cargo of which is due at the end of this month. Resin extremely scarce upon the spot, 4s. 6d. per cwt. being easily made for common sorts. Cod oil, £16. to £18. per ton. Castor oil, 2½d. per lb. for first pressure. Sod oil, for curriers, in better demand, £15. to £22. per ton. Boiled drying oil, £13. per ton.

CAKES.—Linseed cakes firmer. It is reported that stocks of linseed in London will be crushed up this week. 95% pure, £6. 17s. 6d. to £7. 2s. 6d. per ton; Russians scarce, £6. 7s. 6d. to £6. 12s. 6d. Oil-cakes, £5. 12s. 6d. to £5. 15s. Cotton cakes: A firmer feeling, owing to the stronger tendency in seed; best makes, £3. 10s. per ton; seconds, £3. 7s. 6d. Rape cakes unchanged.

PAINTS.—The trade very quiet. Prices are: Venetian red, oxide of iron, black, blue, green, and yellow ochre, in oil, from £12. per ton upwards. Washable distemper water paints, numerous shades, from £24. per ton. White and red lead unchanged; also oxide of zinc. Ready-mixed paints, in tins from 1lb. to 14lbs., £25. per ton. Imperial black tar varnish, £5. 10s. per ton in barrels. Paint remover, 20s. to 30s. per cwt. Oak varnish from 5s. 6d. per gallon.

New Companies.

Bindley and Son, Ltd.—CAPITAL £20,000., in shares of £10. each. This Company has been formed to acquire the business carried on at Smethwick by A. L. Hole, and to trade as makers of glue, gelatine, and size. The subscribers to the memorandum of association are:—A. L. Bindley, Brasshouse-lane, Smethwick, glue manufacturer; A. E. Bindley, Brasshouse-lane, Smethwick; W. A. Bindley, 4, Ampton-road, Birmingham, manufacturer; H. Boyce, Long-street, Sparkbrook, clerk; T. W. Walthall, 286, Rotton Park-road, Birmingham, solicitor; J. H. Haskett, 14, Waterloo-street, Birmingham, chartered accountant; G. Pye, 45, Beaufort-road, Birmingham, solicitor.

Boron Product Co., Ltd.—CAPITAL £15,000., in shares of £1. This Company has been formed to acquire and work certain patents which have not been disclosed. The subscribers to the memorandum of association are:—A. W. V. Duncombe, 11, Millman-street, W.C., solicitor; G. L. Bidwell, 33, Old Broad-street, E.C., engineer; F. W.

Salisbury-Jones, 47, Victoria-street, S.W., engineer; W. H. Robt 17, Trelawn-road, S.W., accountant; Capt. H. Givins, 5, Saverna road, N.W.; E. Ward, 17, Gt. Winchester-street, E.C., clerk; P. Dawson, 20, Richmond-terrace, S.W., shorthand writer.

Grove Chemical Company, Ltd.—CAPITAL £20,000., in shares of £10. each. This Company has been formed to acquire the business Messrs. H. and W. Haworth, at Appley Bridge, Lancashire, and carry on the business of chemical manufacturers and importers. The subscribers to the memorandum of association are:—H. Haworth, Appley Bridge, chemical manufacturer; W. Haworth, Appley Bridge, chemical manufacturer; Mrs. Haworth, Appley Bridge, Appley Bridge; J. B. Cooper, 29, Seabrick-street, Southport, tailor; Mrs. J. B. Cooper, 29, Seabrick-street, Southport; Mrs. J. Haworth, 29, Seabrick-street, Southport; R. J. Farrington, Shevington, near Wigan, cashier.

Societe Anglo-Francaise des Parfumes Perfectionnees, Ltd. CAPITAL £30,000, in shares of £1. each. This Company has been formed to trade as manufacturing chemists and perfumers. The subscribers to the memorandum of association are:—W. E. de B. Artillery-lane, E., manufacturing chemist; J. M. Bush, Artillery-lane, E., manufacturing chemist; E. Oppenheim, 64, Avenue du Bois Boulogne, Paris, propriétaire; A. Courmes, 19, Rue Marbeuf, Paris, propriétaire; R. Oppenheim, 64, Avenue du Bois de Boulogne, Paris, propriétaire; M. R. Webb, J.P., 11, Kensington Court, W.; A. Salamon, 1, Fenchurch-avenue, E.C., chemist.

The Patent List.

This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

Differential Low Pressure Still for Volatile and Inflammable Materials. A. A. Robin. 2,424. February 4.
Improvements in Ball-grinding Mills. A. Herzfeld. 2,425. February 4.
Apparatus for Generating Acetylene. D. B. Morrison. 2,437. February 4.
Smoke-Consuming Apparatus. F. Yeaton. 2,461. February 5.
Manufacture of Sulphuric, Nitric, and Nitrous Acid, and of Sulphate of Soda and Iron Oxide. W. Garway. 2,466. February 5.
Smoke Consuming Apparatus. A. Gerardin and M. Ringelmann. 2,467. February 5.
Obtaining Valuable Products from the Residue from Pressing Oil. J. R. Lopez. 2,491. February 5.
Treating Ores and Liquors containing Gold or Silver. J. Y. Job. 2,493. February 5.
Recovering Ammonia from Sewage and other weak Ammoniacal Liquors. T. Twynan and F. E. Matthews. 2,605. February 6.
Apparatus for Spraying Paint or Pigments. C. I. Burdick. 2,642. February 6.
Paint intended as a Substitute for White Lead, Zinc White, R. Alberdi. 2,636. February 6.
Improvements in Manufacture of Superphosphates. F. W. Sauer. 2,642. February 6.
Production of Cyanogen Compounds. A. E. Morgans. 2,660. February 7.
Using Feldspar and other Silicates for Manures. T. Twynan. 2,672. February 7.
Treating Chlorides for the Production of Chlorine and Alkalies, the Recovery of Bye-products. W. Donald. 2,666. February 7.
Evaporating, Distilling, and Condensing Apparatus. F. H. Eps. 2,723. February 7.
Recovering Precious Metals from their Solutions. H. L. Sulman. 2,723. February 7.
Improvements in Precipitating Precious Metals from their Solutions. H. L. Sulman. 2,730. February 7.
Alloys for Effecting Electro-chemical Decomposition. O. Insey. 2,730. February 8.
Treating Ores containing Precious Metals. A. E. Morgans. 2,730. February 8.
Manufacture of Carbides or Acetylides of the Earth Metals, Alkaline Earths and their Oxides or Salts. L. M. Buller. 2,730. February 8.
Apparatus for Continuous Concentration of Liquids. S. M. Lillie. 2,730. February 8.
Improvements in Manufacture of Cyanides. F. L. Teed. 2,740. February 8.
Producing Cyanide and Ferro-cyanide Compounds of the Alkaline Earths and Alkalies. O. Jaock. 2,884. February 9.

Gazette Notices.

PARTNERSHIPS DISSOLVED.

J. F. FURST, J. FURST, and A. F. FURST, chemical merchants, Philpott E.C., under the style of Furst Bros., and New York, under the style of F. Bros. and Co.
R. H. A. ATKIN and W. B. BOTTOMLEY, chemical manufacturers, Alton Harrow, under the style of Renny, Forbes, and Co.
F. C. KITCHIN and M. KITCHIN, tanners and curriers, Leeds, under the style of Kitchin and Co.

IMPORTS OF CHEMICAL PRODUCTS AT THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.		Cream of Tartar—		Iron Oxide—		Sodium Sulphide—	
ending February 9th.		Italy, 8 pkgs. Thames S. T. & L. Co., Ltd.		61 pkgs L. & I. D. Jt. Co.		Belgium, 6 pkgs. R. W. Greeff & Co.	
ate of Lime—		Germany, 5 Beresford & Co.		Manure—		Starch—	
ates, 826 pkgs. R. & J. Garraway		France, 5 F. C. Devon & Co.		E. Indies, 693 t. Fox, Roy, & Co.		Belgium, 296 pkgs. T. H. Lee	
Acid—		" 15 M. Ashby, Ltd.		" 500 F. A. Hodgkinson		" 40 Arnati & Harrison	
and, 111 pkgs. A. & M. Zimmermann		Dextrine—		Methyl Alcohol—		Holland, 1,411 Little & Johnston	
" 100 Beresford & Co.		Germany, 35 pkgs. Pronk, Davis & Co.		Germany, 9 cks. Lister & Biggs		Germany, 510 Horne & Co.	
ne—		" 100 H. Lorenz		Belgium, 4 dms. H. Lorenz		France, 200 A. Dunn	
and, 26 pkgs. A. & M. Zimmermann		" 50 Hernu, Peron & Co.		Mica—		Belgium, 200 F. Claydon & Co.	
um, 313 c. Arnati & Harrison		" 10 M. D. Co.		E. Indies, £74 W. M. Smith & Sons		" 511 Prop. Scott's Wf.	
and, 6 pkgs. W. Burton & Sons		Prop. Sun. Wf.		U. States, 100 T. Davis		Germany, 200 C. Tennant, Sons & Co.	
um, 50 R. W. Greeff & Co.		Dyestuffs—		Molasses—		U. States, 110 Horne & Co.	
any, 13 Ohlenschlager Brs.		France, 12 pkgs. R. J. Fullwood & Bland		U. States, 100cks, 558 c. Deering & Robottom		Holland, 110 G. Rahn & Co.	
ium, £168 Major & Field		Argols		Germany, 802 4,000 J. R. Francis & Co.		Belgium, 160 Leach & Co.	
any, 80 C. Tennant, Sons & Co.		Italy, 2,019 pkgs. B. Jacob & Sons		Norway, 6 27 R. D. Taylor		Stearine—	
racene—		" 456 Thames S. T. & L. Co., Ltd.		Ochre—		France, 230 bgs. G. Boor & Co.	
and, 163 pkgs. Burt, Boulton & Co.		Cochineal		France, 100 cks. Schenker & Co.		" 240 Walbaum & Tosetti	
ony Ore—		Canaries, 11 pkgs. G. S. Bruce		" 126 W. Harrison & Co.		" 50 pkgs. Prop. Chmbln's Wf. Co.	
agal, 5 t. J. Bamber		" 8 Swanton & Co.		Ozokerit—		Holland, 68 H. Hill & Sons	
25 Coml Lightge. Co.		Extracts		Germany, 129 pkgs. Grosscurth & Luboldt		Belgium, 102 bgs. 13 cks. "	
tos—		Belgium, 20 cks. L. J. Levinstein & Sons		Paraffin Wax—		Sulphur—	
any, £7 Craven & Co.		France, 50 Union L. Co.		U. States, 100 cks. Prod. Brokers Co.		Italy, 50 t. Soundy & Sons	
any, 600 Baynham & Co.		Denmark, 47 pkgs. R. J. Fullwood & Bland		" 693 brls. H. Hill & Sons		" 200 B. Jacob & Sons	
ce, 565 W. Byford		" 50 Bailey & Leetham		" 2,599 pkgs. Anglo-American Oil Co.		" 31 Pigon & Wilks	
tes—		" 15 M. D. Co.		Phosphate Rock—		" 25 G. Boor & Co.	
any, 24 cks. J. Owen		Fustic		Belgium, 300 t. West & Penrose		Tartaric Acid—	
um, 300 bgs. Leach & Co.		Jamaica, 130 t. Benckendorff & Co.		France, 425 A. Hunter & Co.		Holland, 2 pkgs. C. F. Gerhardt	
" 23 O'Hara, Matthews & Co.		Indigo		" 280 A. J. Smith		" 5 B. & F. Wf. Co.	
any, 20 T. Robertson		E. Indies, 187 cts. L. & I. D. Jt. Co.		Pitch—		Turpentine—	
and, 45 W. Pope & Co.		" 4 R. von Glehn & Sons		France, 46 brls. J. Greig		N. Russia, 52 brls. W. Caudery & Co.	
ine—		" 7 Arbuthnot, Latham & Co.		" 52 Poth, Hille, & Co.		" 52 H. Bertram & Co.	
any, 20 pkgs. A. & M. Zimmermann		" 9 H. Johnson & Sons		Plumbago—		Ultramarine—	
hor—		" 19 J. Hatton, Hall & Co.		Belgium, 20 cks. Leach & Co.		Holland, 6 cs. Philipps & Graves	
n, 143 pkgs. S. Figgis & Co.		" 24 T. Barlow & Brs		U. States, 600 Rosenberg, Loewe, & Co.		Belgium, 7 pkgs. W. Harrison & Co.	
g Kong, 64 City Coml. Wf., Ltd.		" 53 Patry & Pasteur		Holland, 57 B. Gallaway		France, 6 C. J. Langmead	
ehoue—		Holland, 679 T. H. Lee		Potassium Bicarbonate—		Holland, 1 ck. G. Rahn & Co.	
bar, 39 c. S. Figgis & Co.		E. Indies, 64 pkgs. Ross & Deering		Holland, 55 cks. A. & M. Zimmermann		Varnish—	
any, 28 Forbes, Forbes & Co.		Logwood		Potassium Carbonate—		U. States, 89 pkgs. W. H. Staynes & Co.	
any, 25 Wallace Brs.		Jamaica, 99 t. Hawthorn, Shedden & Co.		Belgium, 23 c. F. Claydon & Co.		Germany, 8 L. & I. Dk. Co.	
any, 25 C. S. Lovell		Shumac		France, 40 F. J. Putz & Co.		France, 12 Flageollet & Co.	
any, 1 Hale & Son		Italy, 350 pkgs. W. Shelcott		Potassium Chloride—		White Lead—	
any, 12 Anderson, Weber & Smith		" 54 Blundell, Spence & Co.		Germany, 200 pkgs. W. G. Blagden		Germany, 20 cks. G. Farmiloe & Sons	
any, 24 L. & I. D. Jt. Co.		" 200 J. E. Scott & Co.		Potassium Oxymuriate—		Belgium, 21 Perkins & Homer	
any, 26 Arbuthnot, Ewart & Co.		" 200 A. Slater & Co.		Sweden, 50 pkgs. G. Boor & Co.		Germany, 13 Leach & Co.	
ritius, 118		Tanner's Bark		Potassium Sulphate—		H. Lambert	
any, 3 L. & I. D. Jt. Co.		Belgium, 13 t. Leach & Co.		France, 500 pkgs. F. W. Berk & Co.		Wood Pulp—	
agascar, 49 Blyth, Green & Co.		Adelaide, 15 Devitt & Hett		Germany, 43 A. J. Smith		Sweden, 476 bls. C. S. Lovell	
Oil—		Natal, 50 Boucher, Mortimore & Co.		W. G. Blagden		Denmark, 80 G. F. Green & Co.	
ce, 58 brls. J. Greig		Farina—		Pumice Stone—		Germany, 1,116 E. J. & W. Goldsmith	
65 Lucas & Spencer's		Germany, 100 pkgs. C. Tennant, Sons & Co.		Italy, 110 t. O'Hara & Hoar		Canada, 8,211 W. G. Taylor & Co.	
80 M. Dettman		Holland, 50 J. Knill & Co.		" 6 W. J. Davies & Sons		Germany, 52 Horton Kirby Paper Co.	
40 cs. W. M. Smith & Sons		" 100 R. G. Hall & Co.		N. Zealand, 10 Shaw, Lovell, & Co.		Norway, 1,458 W. G. Taylor & Co.	
36 Stebbing & Co.		Glucose—		Italy, 2 H. B. Alder & Co.		Holland, 54 C. S. Lovell	
10 May, Roberts & Co.		U. States, 750 pkgs. 750c. Ohlenschlager		Pyrates—		" 1,400 E. J. & W. Goldsmith	
20 City Coml. Wf., Ltd.		" 751 751 c. Trier, Meyer & Co.		Quicksilver—		Sweden, 60 pkgs. Moreton Cox Brs.	
ic Potash—		Germany, 25 5,304 L. Sutro & Co.		Italy, 100 bils. H. Bath & Son		Belgium, 77 Horton Kirby Paper Co.	
um, 50 c. Petri Brs.		" 200 212 " Morgan		N. Russia, 490 L. & I. D. Jt. Co.		Norway, 25 59 bls. C. S. Lovell	
and, 192 J. M. Steel & Co.		" 200 200 Tyser, Morgan & Co.		Rosin—		Sweden, 300 W. E. Bott & Co.	
icals (otherwise undescribed)		U. States, 1,200 1,400 R. G. Hall & Co.		U. States, 400 brls. Moore & Hole		Germany, 162 W. G. Taylor & Co.	
and, 5 pkgs. Philipps & Graves		" 1,000 1,000 Barrett, Tagant & Co.		" 200 C. Tennant, Sons, & Co.		Germany, 812 W. Friedlander	
um, 11 2 cs. T. Palmer		" 500 500 Hoare, Wilson & Co.		Holland, 21 F. & S. Chiesman & Co.		Zinc Oxide—	
any, 60 T. H. Lee		" 250 250 Humphrey & Co.		Saltpetre—		Germany, 25 cks. Beresford & Co.	
" 9 Craven & Co.		" 500 500 J. Barber & Co.		E. Indies, 660 bgs. C. Wimble & Co.		" 50 Magee, Taylor, & Co.	
" 155 A. & M. Zimmermann				" 779 Lucas & Spencer's		Holland, 500 Soundy & Sons	
" 2 cs. Philipps & Graves				Belgium, 85 Wf. Co.		" 50 pkgs. Prprs. Dowgate	
				Holland, 40 cks. P. Hecker & Co.		Germany, 75 brls. M. Ashby, Ltd.	
				Silica—		U. States, 100cs. Fellows, Morton, & Co., Ltd.	
				Germany, £100 A. Haacke & Co.		" 20 brls. Ryley & Co.	
						" 30 M. Ashby, Ltd.	
						Zinc Sulphate—	
						Germany, 31 pkgs. City Coml. Wf., Ltd.	
						" 16 E. S. S. Co.	

LIVERPOOL.

Week ending February 7th.

Acetate of Lime — New York, 239 bgs.	
Acetic Acid — Rotterdam, 5 blns.	
Antimony — Valparaiso, 491 sks.	A. Gibbs & Sons
" 350	Kleinwort, Sons, & Co.
" 150	Cunard S. S. Co., Ltd.
" 7 cs.	
Barytes — Rotterdam, 22 cks.	
Bone Ash — B. Ayres, 300 bgs.	H. Brown
Bone Meal — Bombay, 15,000 bgs.	
Boraxite — Panderma, 20 t. 1,140 bgs.	
Borate of Lime — New York, 2,600 bgs.	Balfour Williamson
Borax — Valparaiso, 670 sks.	F. Huth & Co.
Caoutchouc — Valparaiso, 8 bls.	Kleinwort, Sons & Co.
Castor Oil — Calcutta, 582 cs.	Ralli Bros.
Marseilles, 12 cks.	
Cellulose — Rotterdam, 15 bls.	
Chemicals (otherwise under.) — Baltimore, 50 cks.	
Philadelphia, 16	Richardson, Spence & Co.
Colours — Stettin, 20 cks.	Duckworth & Co.
Antwerp, 4	
Ghent, 4 bls.	J. T. Fletcher & Co.
Dyestuffs — Algarroffia Valparaiso, 118 bgs.	A. W. Real
Argols Oporto, 30 cks.	German Bk., London
Extracts New York, 5 bls.	W. H. Jamieson & Co.
" 20	W. Bingham
Ghent, 50 cks.	
Bordeaux, 151	
Indigo Calcutta, 453 chta.	
Myrabolams Bombay, 1,063 bgs.	
Sumac Bordeaux, 105 bls.	
Turnerie Bombay, 25 bgs.	
Farina — Horn, 508 bgs.	Cunard S. S. Co., Ltd.
Flax Skimmings — Antwerp, 25 cks.	
Glucose — New York, 300 bgs.	
Philadelphia, 450 bls.	
Manganese Ore — Pitt, 1,463 t.	
Gases — Port Royal, S. C. 1 bgs.	
Antwerp, 1 ck.	
Paint — Bremen, 25 cs.	A. W. Sutton & Co.
" 50	Salir, Behrend & Ross
" 80	
Portland, 5 bks.	Wingate & Johnson
Paraffin Seals — Baltimore, 100 bls.	
Philadelphia, 100	
Phosphate — Ghent, 177.	Anglo-Cont. Guano Wks.
Dunkirk, 1,404 bgs.	
Phosphate Rock — Savannah, 1,000 t.	
Potash — Dunkirk, 35 dms.	

Pyrites — Huelva, 1,368 t.	Matheson & Co.
Salt — Hamburg, 30 cks. 5 cs.	
Saltpetre — Hamburg, 100 kgs. 16 cks.	
Soap — New York, 211 cs. 299 bks.	R. Crooks & Co.
Philadelphia, 21	Fels & Co.
" 20	
Rotterdam, 3	
Barcelona, 4	W. I. & P. S. S. Co.
Marseilles, 6	
Soapstone — Bordeaux, 200 bgs.	G. G. Blackwell, Sons & Co.
Starch — Amsterdam, 76 bks.	
Hamburg, 72 cs.	J. T. Fletcher & Co.
Antwerp, 18	
" 160	
Stearine — New York, 75 pkgs. 25 hds.	Co-op. Wholesale Society, Ltd.
Sulphur Ore — Huelva, 1,415 t.	
Sulphuric Ether — Hamburg, 5 blns.	
Tallow — B. Ayres, 15 cks.	Las Cabezas stancine
" 857	
Zarate, 250 pps.	J. Nelson & Sons, Ltd.
Tartar — Bordeaux, 23 cks.	
Tartaric Acid — Bordeaux, 4 cks.	
Rotterdam, 3	
Treacle — New York, 450 bls.	
Varnish — Ghent, 3 cks.	
Verdigris — Bordeaux, 3 cks.	
Waste Salt — Hamburg, 28 cks.	
White Lead — Rotterdam, 25 cks.	
Antwerp, 41	
Wood Pulp — Rotterdam, 96 bls.	
Christiania, 500	
Skien, 3,460	
Antwerp, 54	
Portland, 870	
Zinc Oxide — New York, 100 bls.	
Antwerp, 110	
Rotterdam, 25 cks.	
Zinc White — Rotterdam, 175 cks.	
Hamburg, 80	

MANCHESTER.

Week ending February 9th.

Acetate of Lime — New York, 824 bgs.	Higginbottom & Co.
" 1,493	
Acetic Acid — Rotterdam, 9 blns.	
Albumen — Hamburg, 4 cks.	
Aluminium Oxide — Hamburg, 1 ck.	
Antimony Salts — Hamburg, 2 cks.	
Arachide Oil — Rotterdam, 10 cks.	
Bi-Fluoride — Hamburg, 1 ck.	
Bone Ash — Rio Grande do Sul, 220 t.	
Chemicals (otherwise under.) New York, 20 cks.	
Hamburg, 1 ck.	
Chrome Alum — Rotterdam, 44 bls. 35 cks.	
Colours — Rotterdam, 36 bls. 61 bks.	
Antwerp, 18 cks.	
Hamburg, 72 1 cs.	

Dyestuffs — Allizarine Rotterdam, 6 cks.	
Extraacts Rotterdam, 20 cks.	
Farina — Hamburg, 500 bgs.	
Litharge — Rotterdam, 18 cks.	
Mineral White — Bordeaux, 100 bgs.	J. & P. Hutchinson
Potash — Rotterdam, 10 cks.	
Starch — Rotterdam, 40 cs.	
Antwerp, 120	
Hamburg, 816	
Stearine — New York, 25 hds.	
Antwerp, 7 bgs.	
Tartar — Bordeaux, 21 cks.	J. & P. Hutchinson
Hamburg, 2	
Tartar Emetic — Hamburg, 8 cks.	
Tartaric Acid — Rotterdam, 4 cks.	
Ultramarine — Rotterdam, 4 cks. 3 cs.	
Hamburg, 20	
Wood Pulp — Fredrickstad, 5,760 bls.	
Drammen, 5,045	
Zinc Ashes — Antwerp, 8 cks.	
Zinc Oxide — Antwerp, 50 bls.	

HULL.

Week ending February 9th.

Acetate — New York, 1,604 bgs.	Wilson, Sons, & Co., Ltd.
Aniline — Rotterdam, 1 kg.	W. & C. L. Ringrose
Amsterdam, 2 cks.	"
Aniline Colours — Hamburg, 10 bls.	
Arsenic — Stettin, 100 cks.	Wilson, Sons, & Co., Ltd.
Asbestos — Genoa, 9 bls.	
Barytes — Rotterdam, 22 cks.	Hutchinson & Son
Bremen, 23	Johnson Bros.
" 23	Storry, Witty, & Co.
" 72	Blundell, Spence, & Co.
" 23	Hanger, Watson & Harris
Antwerp, 250 bgs.	H. F. Pudsey
Carbonic Acid — Rotterdam, 30 tubes	Wilson, Sons, & Co., Ltd.
Castor Oil — Genoa, 15 cs.	Wilson, Sons, & Co., Ltd.
Chemicals (otherwise under.) Naples, 3 cks.	
Antwerp, 46 pkgs.	Wilson, Sons, & Co., Ltd.
Stettin, 28 bls.	"
Dunkirk, 4 cks.	"
Bremen, 2 cs.	Veltmann & Co.
" 1 ck.	Hanger, Watson & Harris
Dunkirk, 44 dms.	Bailey & Leatham
Cod Oil — Drontheim, 30 bls.	Wilson, Sons, & Co., Ltd.
Aalesund, 170	"
Bergen, 117 1 cs.	"
Colours — Leghorn, 11 cks.	
Antwerp, 47	Wilson, Sons, & Co., Ltd.
Antwerp, 1	Bailey & Leatham

Rotterdam, 3 cs.	Hutchinson & Son
" 1 189 pkgs.	W. & C. L. Ringrose
Amsterdam, 3	"
Cream of Tartar — Rotterdam, 2 cks.	W. & C. L. Ringrose
Cryolite — Copenhagen, 3 cks.	Wilson, Sons, & Co., Ltd.
Dextrine — Stettin, 100 bgs.	Wilson, Sons, & Co., Ltd.
Dyestuffs — Allizarine Rotterdam, 34 bls.	Hutchinson & Son
" 11 cks.	W. & C. L. Ringrose
Madder — Rotterdam, 1 ck.	W. & C. L. Ringrose
" 2	Hutchinson & Son
Farina — Stettin, 1,100 bgs.	Wilson, Sons, & Co., Ltd.
Ghent, 220 bks.	"
Glucose — Stettin, 5 cks.	Wilson, Sons, & Co., Ltd.
" 20	
Manure — Ghent, 500 bgs.	Wilson, Sons, & Co., Ltd.
Oxalic Acid — Rotterdam, 6 cks.	W. & C. L. Ringrose
Phosphate — Dunkirk, 162 bgs.	Wilson, Sons, & Co., Ltd.
" 1,438	
Ghent, 101 t.	"
Potash — Hamburg, 10 bls.	G. Hahn & Co.
Pumice Stone — Leghorn, 18 cks.	Wilson, Sons, & Co., Ltd.
Marseilles, 1	
Saltpetre — Hamburg, 7 cks.	Lothman & Salomon
Soap — Marseilles, 2 cs.	Wilson, Sons, & Co., Ltd.
Starch — Antwerp, 200 cs.	Wilson, Sons, & Co., Ltd.
Bremen, 2,086	Veltmann & Co.
Stearine — Amsterdam, 37 bgs.	Wilson, Sons, & Co., Ltd.
Tartaric Acid — Rotterdam, 4 cks.	W. & C. L. Ringrose
Treacle — New York, 278 bls.	Wilson, Sons, & Co., Ltd.
White Lead — Rotterdam, 10 cks.	W. & C. L. Ringrose
Antwerp, 37	Bailey & Leatham
Wood Pulp — Hamburg, 4 bls.	Bailey & Leatham
" 33	Furley & Co.
Bremen, 140	
Hango, 245	J. Good & Son
" 181	Furley & Co.
" 156	
Zinc White — Amsterdam, 10 cks.	W. & C. L. Ringrose

GLASGOW.

Week ending February 16th.

Acetate of Lime — Philadelphia, 375 bgs.	
Albumen — Oporto, 2 cs.	
Aniline — Amsterdam, 1 kg.	
Hamburg, 2 cks. 1 ck.	
Antimony Salt — Hamburg, 18 cks.	

m Chloride— rdam, 4 cks. J. Rankine & Son	Pitch— Rotterdam, 1 ck.
es— rdam, 44 cks. J. Rankine & Son	Potash— New York, 5 cks. J. Rankine & Son Rotterdam, 38 dms.
nic Acid— rdam, 15 tubes J. Rankine & Son	Pyrites— Huelva, 1,584 t. Tharsis Co.
icals (otherwise undescribed) burg, 1 cs. 1 ck.	Rosin— Rotterdam, 8 cks. J. Rankine & Son New York, 1,018 brls. Baltimore, 1,350
t Ore— sea, 600 t. Nickel Co.	Saltpetre— Hamburg, 1 brl. 7 kgs
rdam, 20 pkgs.	Soap— Baltimore, 240 brls. W. T. Geddes
rdam, 14 cs. 8 cks. J. Rankine & Son	Sodium Acetate— Rouen, 8 cks.
burg, 1 7	Stearine— Amsterdam, 61 bgs.
seed Oil— York, 30 brls.	Tartar— Bordeaux, 20 cks.
rdam, 10 J. Rankine & Son	Oporto, 5
uffs—	Treacle— Philadelphia, 1,000 brls.
arine	New York, 100 Wm. Maclay
rdam, 126 pkgs	Yarnish— New York, 10 bxs.
43 brls. 1 bx. J. Rankine & Son	Rouen, 6 cks.
gols	Verdigris— Bordeaux, 3 cks.
aux, 83 cks. 66 bgs.	Wood Pulp— Christiania, 3,636 bls.
tracts	Hamburg, 203 bdl.
es, 200 cks.	Oporto, 400
aux, 5 cs.	Halifax, 223 rolls.
se—	Zinc Oxide— Rotterdam, 35 cks. J. Rankine & Son
delphia, 200 brls.	New York, 60 brls.
York, 500	
orial Earth— burg, 43 bgs.	
n, 41 cks.	
in Scale— York, 21 brls.	

Pitch— Rotterdam, 1 ck.	Barium Chloride— Hamburg, 182 bgs. Tyne S. S. Co.
Potash— New York, 5 cks. J. Rankine & Son Rotterdam, 38 dms.	Cod Oil— Bergen, 5 brls. Trondhjem, 5
Pyrites— Huelva, 1,584 t. Tharsis Co.	Farina— Antwerp, 5 bgs. Tyne S. S. Co.
Rosin— Rotterdam, 8 cks. J. Rankine & Son New York, 1,018 brls. Baltimore, 1,350	Pyrites— Huelva, 1,769 t. Scott Bros.
Saltpetre— Hamburg, 1 brl. 7 kgs	Starch— Antwerp, 20 cs. Tyne S. S. Co.
Soap— Baltimore, 240 brls. W. T. Geddes	Tartaric Acid— Rotterdam, 4 cks. Tyne S. S. Co.
Sodium Acetate— Rouen, 8 cks.	Ultramarine— Hamburg, 14 cks. Tyne S. S. Co.
Stearine— Amsterdam, 61 bgs.	Wood Pulp— Christiania, 28 bls. Trondhjem, 240
Tartar— Bordeaux, 20 cks.	Zinc Oxide— Antwerp, 25 cks. Tyne S. S. Co.
Oporto, 5	
Treacle— Philadelphia, 1,000 brls.	
New York, 100 Wm. Maclay	
Yarnish— New York, 10 bxs.	
Rouen, 6 cks.	
Verdigris— Bordeaux, 3 cks.	
Wood Pulp— Christiania, 3,636 bls.	
Hamburg, 203 bdl.	
Oporto, 400	
Halifax, 223 rolls.	
Zinc Oxide— Rotterdam, 35 cks. J. Rankine & Son	
New York, 60 brls.	

TYNE. Week ending February 9th.
Barium Chloride— Hamburg, 182 bgs. Tyne S. S. Co.
Cod Oil— Bergen, 5 brls. Trondhjem, 5
Farina— Antwerp, 5 bgs. Tyne S. S. Co.
Pyrites— Huelva, 1,769 t. Scott Bros.
Starch— Antwerp, 20 cs. Tyne S. S. Co.
Tartaric Acid— Rotterdam, 4 cks. Tyne S. S. Co.
Ultramarine— Hamburg, 14 cks. Tyne S. S. Co.
Wood Pulp— Christiania, 28 bls. Trondhjem, 240
Zinc Oxide— Antwerp, 25 cks. Tyne S. S. Co.

GOOLE. Week ending February 6th.
Albumen— Ghent, 3 cs.
Alkali— Calais, 15 cks.
Alum— Rotterdam, 136 bgs.
Antimony— Boulogne, 4 cks.
Colours— Hamburg, 20 cks. 1 cs.

Dyestuffs— Alizarine Rotterdam, 36 pkgs. Extracts Ghent, 80 cks. Rouen, 20 Madder Rotterdam, 1 ck. Dyestuffs (otherwise undescribed) Rotterdam, 247 pkgs. Boulogne, 19 cks. 30 cs. Ghent, 6 Potash— Rotterdam, 12 cks. Dunkirk, 8 dms. Saltpetre— Rotterdam, 68 bgs. Hamburg, 23 cks. Antwerp, 142 Zinc Oxide— Antwerp, 25 brls.
--

GRIMSBY. Week ending February 9th.
Aniline Dyes— Hamburg, 86 pkgs. Antwerp, 47 Chemicals (otherwise undescribed) Antwerp, 3 cks. Hamburg, 20 Colours— Rotterdam, 100 bgs. Antwerp, 65 cs. 6 cks. Hamburg, 3 Dyestuffs (otherwise undescribed) Dieppe, 25 cks. Farina— Hamburg, 29 bgs. Starch— Antwerp, 20 cs.

EXPORTS OF CHEMICAL PRODUCTS

OF

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON. Week ending February 13th.
Atta, 2 cs. £17
os, 3 c. 13
l—
Atta, 1 t. 10 c. £44
Atta, 1 6 52
Atta, 18 8
land, 2 2 21
ourne, 2 t. £13
onia—
z, 10 drs. £62
onia and Disinfectants— bay, 7 pkgs. £18
onium Carbonate— hama, 5 t. £166 ourne, 10 c. 20 cs. 60 bay, 5 17
onium Chloride— rio, 1 t. £36 ourne, 10 c. £21
onium Sulphate— ien, 100 t. £1,100 iburg, 523 2 c. 5,050 kirk, 10 115 it, 235 2,590
drous Ammonia— ey, 25 cyldrs. £105
le—
church, 2 t. £31
York, 20 5 c. 290
ourne, 1 2 16
ic Acid— ourne, 4 t. £88
k—
iburg, 10 cks. £76
on Bisulphide— kirk, 14 drs. £64 ideo, 1 t. 25
onic Acid Gas— uda, 15 cs. £13

Caustic Soda— Fremantle, 3 c. £6 Wellington, 5 t. 2 42 E. London, 1 24 Algoa Bay, 17 19
Chemicals (otherwise undes.)— Canterbury, 1 t. 1 c. £30 Sydney, 2 cs. 10 Auckland, 40 kgs. 13 Beira, 5 19 Algoa Bay, 2 t. 16 51 Wellington, 7 86 Cape Town, 12 27 Bombay, 44 350 Santos, 14 26
Chlorate of Lime— Rosario, 10 c. £9
Citric Acid— Boston, 1 c. £6 Hiogo, 10 61 Yokohama, 15 92 Cape Town, 5 31 Fremantle, 3 24 Cadiz, 4 26 Antwerp, 11 68 Brussels, 2 cks. 61 Barcelona, 1 t. 124 Hamburg, 1 10 kgs 191
Coal Products— Alizarine Boston, 2 cs. £93 Aniline Dyes Sydney, 1 cs. £9 Anthracene Dusseldorf, 158 cks. £1,420 Benzol Rotterdam, 28 drs. 17 puns. £484 Carbolic Acid Melbourne, 90 drs 12 cs £107 Yokohama, 60 133 Amoy, 15 11 Hiogo, 50 cks. 115 Rotterdam, 55 184 Creosote Dieppe, 587½ brls. £123 Naphtha Sydney, 20 drs. £20 Naphthaline New York, 16 cks. £23 Montreal, 90 120

Pitch Antwerp, 510 t. £893 Hamburg, 4 brls. 12 La Rochelle, 719 1,258 Aviles, 1,000 1,740 Newport News, 500 bgs. 166 Dunkirk, 4,815 t. 8,562 New York, 511 bgs. 107 Alexandria, 250 brls. 98 E. London, 10 cks. 9 Boston, 55 651 514 Tar Algoa Bay, 753 pkgs. £15 Boston, 400 brls. 200 Tamatave, 53 drs. 8 Melbourne, 50 9 Natal, 70 15 Tar Oil Trelleborg, 773 brls. £427 Hamburg, 150 87 Toluol Boulogne, 20 puns. £122 Coal Products (otherwise undes.)— Cape Town, 6 brls. 10 kgs. £8 Copper Sulphate— Treport, 24 t. £365 Rouen, 10 3 c. 165 Copenhagen, 2 11 38 Lisbon, 10 160 Corrosive Sublimate— Bombay, 1 cs. £12 Cream of Tartar— Christchurch, 10 c. £33 Melbourne, 4 t. 266 Auckland, 10 kgs. 40 Cape Town, 4 17 Disinfectants— Amoy, 15 dms. £13 Shanghai, 9 cs. 44 Bombay, 140 drs. 28 Natal, 4 c. 11 Calcutta, 125 pkgs. 9 107 New York, 1 t 6 17 Cape Town, 155 359 Madras, 6 12 Melbourne, 10 26 Guano— Landerneau, 305 t. £3,050 Hypophosphite of Lime— Hamburg, 4 cs. £65
--

Manure— Berbice, 20 t. £205 Jamaica, 1 10 Bordeaux, 30 105 Cape Town, 5 15 Rouen, 70 2 c. 580 Martinique, 61 3 300
Nitric Acid— Jersey, 20 carboys £40
Oxalic Acid— Madras, 20 cks. £34
Phosphorus— Melbourne, 2 c. £10 Sydney, 22 cs. 221 Wellington, 20 207
Potash— Wellington, 13 c. £16
Potassium Chlorate— Bombay, 4 cs. £24 Melbourne, 3 c. 7 Gothenburg, 5 kgs. 13
Potassium Cyanide— Sarawak, 1 cs. £19 Madras, 5 cks. 26
Potassium Nitrate— Brisbane, 10 kgs. £12
Potassium Prussiate— Bombay, 3 cs. £15 Cologne, 1 ck. 22
Saltpetre— M. Video, 1 t. 8 c. £33 Melbourne, 7 160 Rio Grande, 1 3
Sheep Dip— Dunedin, 2 t. 14 c. 290 pkgs. £330 Lyttelton, 270 pkgs. 225 Cape Town, 2 t. 5 c. 93 Mossel Bay, 100 cs. 260
Soda— Cape Town, 3 t. 6 c. £7 Mauritius, 3 13 33 Algoa Bay, 5 23 Santos, 10 5
Soda Crystals— Cape Town, 2 t. 8 c. £6 Christchurch, 3 10 16

Sodium—			
New York, 3 t. 1 c.	£448		
Sodium Bicarbonate—			
Townsville, 5 t.	£36		
Rockhampton, 1	8		
Trinidad, 1	8		
B. Ayres, 1	7		
Sodium Sulphate—			
Ghent, 170 t.	£110		
Sulphuric Acid—			
Natal, 1 t. 10 c.	£16		
Algoa Bay, 3	14		
Superphosphate—			
Mauritius, 66 t. 11 c.	£230		
Tartaric Acid—			
Cape Town, 8 c.	£38		
Perth, 5	28		
Fremantle, 3	14		
Hioho, 9	41		
Yokohama, 1 t.	40		
Kurrachee, 1 t.	40		
Auckland, 4	509		
Melbourne, 4	509		
Boulogne, 5 c.	£25		

LIVERPOOL.

Week ending February 13th.

Acetic Acid—			
Seville, 5 c.	£9		
Alum—			
San Francisco, 15 t. 1 c. 3 q.	£69		
Portland, O., 47	10		
Gabes, 1	1		
Tunis, 1	1		
Galatz, 2	19		
Sousse, 1	10		
Calcutta, 6	1		
B. Ayres, 3	4		
Madras, 1	1		
New York, 11	1		
Smyrna, 10	12		
Aluminous Cake—			
Bombay, 5 t. 1 c. 2 q.	£13		
Ammonia (Liquid)—			
Rangoon, 7 c.	£9		
Ammonium Carbonate—			
Marseilles, 15 c.	£25		
Ammonium Chloride—			
Antwerp, 7 c.	£10		
Varna, 10	18		
Genoa, 2 t. 15	51		
Rotterdam, 4	19		
Alexandria, 5	18		
Portland, M., 1	1		
Beyroust, 2	4		
Bombay, 1	10		
Ammonium Sulphate—			
Barcelona, 33 t. 3 c. 3 q.	£615		
Laghorn, 10	2		
Genoa, 31	4		
New York, 177	10		
Valencia, 361	12		
Alicante, 5	62		
Las Palmas, 50 kgs. 21 t. 1 c. 2	306		
Antimony—			
Bilbao, 1 ck.			
Arsenic—			
B. Ayres, 27 cks.	£90		
Wellington, N.Z., 3 t.	70		
Asbestos—			
Port Said, 3 cks. 1 ckt.			
Rio de Janeiro, 1 ck.			
Bleaching Powder—			
Ancona, 12 cks	26		
Baltimore, 128			
Boston, 128			
B. Ayres, 50 kgs. 50			
Calcutta, 30 cks. 125			
New York, 317			
Oporto, 35			
Boric Acid—			
M. Video, 1 t.	£34		
Boston, 2	64		
New York, 6	121		
Borax—			
Antwerp, 1 t. 2 c.	£30		
Hamburg, 7	10		
Sydney, 30	21		
Rotterdam, 14	23		
Monrovia, 15	6		
New York, 73 cks. 29 t. 2	724		
Genoa, 2	25		
Carbolic Acid—			
New York, 1 t. 4 c. 2 q.	£68		
Hioho, 18	3		
Savannah, 2	13		
Fremantle, 170 dms.			
Venice, 4	12		

Hamburg, 19 t. 6	947		
Baltimore, 9 cks. 10	12		
Carbon Bisulphide—			
Sydney, 11 t. 14 c. 2 q.	£139		
Caustic Potash—			
San Francisco, 2 t. 2 c.	£50		
Genoa, 9	14		
Lisbon, 1	3		
New York, 13	20		
Caustic Soda—			
Bilbao, 37 dms.			
Boston, 37	55		
Hamburg, 20			
Marseilles, 50			
N. Orleans, 60			
New York, 239			
Oporto, 45			
Para, 30			
Portland, 6			
Queretaro, 131			
Rotterdam, 8			
Seville, 107			
Talavera, 75			
Tarragona, 3			
Victoria, V.I., 50			
Chemicals (otherwise undescribed)			
Alexandria, 1 t.	£37		
Rotterdam, 8 c.	14		
Bordeaux, 3 cks.	98		
Catania, 4	7		
Kurrachee, 18	33		
Genoa, 3	6		
Philadelphia, 12	15		
New York, 14	8		
China Clay—			
Boston, 511 t.			
New York, 150 cks.			
Oporto, 100 bgs.			
Philadelphia, 394			
Coal Products—			
Cresote Oil			
Cette, 300 brls.			
Naphthaline			
New York, 3 cks.			
Pitch			
Cette, 2,544 t.			
Tar			
Lagos, 8 brls.			
Philadelphia, 100 cks.			
Wellington, 30 dms.			
Tar Salts			
New York, 5 t. 5 c.	£200		
Cobalt Oxide—			
Gijon, 1 c.	£29		
Copperas—			
Calcutta, 14 t. 5 c.	£25		
Smyrna, 7	9		
Copper Sulphate—			
Oporto, 12 t. 3 c. 2 q.	£176		
Venice, 61	5		
Bordeaux, 35	17		
Seville, 2	3		
Ancona, 39	10		
Guadalajara, 2	16		
Genoa, 10	2		
Laghorn, 4	12		
Barcelona, 11	2		
Vera Cruz, 3	15		
Valencia, 9	18		
Algiers, 9	2		
Almeria, 4	18		
Ibrail, 1	14		
Marseilles, 42	18		
Santos, 11	2		
Odessa, 10	12		
Glucose—			
New York, 16 dms.			
Guano—			
Valencia, 250 t.	£7,110		
Gypsum—			
Lisbon, 6 t.	£14		
Iron Silicate—			
New York, 4 t. 8 c. 3 q.	£19		
Iron Sulphate—			
B. Ayres, 4 t. 8 c. 2 q.	£6		
Litharge—			
Pernambuco, 20 cks.			
Magnesium Chloride—			
Nantes, 78 dms.			
Magnesium Sulphate			
B. Ayres, 17 cks.			
Manure—			
St. Nazaire, 576 t. 9 c.	£1,697		
Havre, 80	240		
Las Palmas, 10	47		
Valencia, 13	35		
Paint—			
Barcelona, 4 cks.			
Bey Beach, 20 kgs.			
Conakry, 100			
Gd. Bassa, 12			
Hong Kong, 9			

Lagos, 2	40		
Lisbon, 23	25		
Monrovia, 2 brls.			
Pacasmayo, 16	12		
Para, 10			
Rio de Janeiro, 10			
Shanghai, 1 cks.			
Talcahuano, 10			
Valparaiso, 1	21		
Painters' Colours—			
Acajutla, 1 cs.			
Alexandria, 200 cks. 100 kgs.			
Antwerp, 2			
Bahia, 12	12		
Barcelona, 10			
Galatz, 4	580		
Ghent, 15			
Havre, 15			
Lisbon, 1 cs.			
Marseilles, 12			
M. Video, 17	6		
New York, 225	31		
Oporto, 1			
Para, 1			
Pernambuco, 9			
Portland, M., 2	1		
Puerto Cabello, 6			
Rio de Janeiro, 12			
Rotterdam, 120 bgs.			
San Francisco, 115 cks.			
Santiago, 2			
Santos, 55			
Paris White—			
Antwerp, 4 cks.			
Phosphate of Lime—			
Ferrol, 8 c. 3 q.	£12		
Picric Acid—			
New York, 3 t. 11 c. 2 q.	£312		
Potassium Bicarbonate—			
Oporto, 3 t. 1 c. 2 q.	£59		
Potassium Bichromate—			
Seville, 7 c.	£14		
Passages, 15	38		
Madras, 1 t.	3 q.		
Potassium Bisulphate—			
Oporto, 12 c.	£80		
Potassium Carbonate—			
Santos, 9 c. 3 q.	£12		
Baltimore, 12 t. 3	219		
Genoa, 1	1		
Potassium Chlorate—			
Alexandria, 6 c.	£15		
Antwerp, 1 t.			
Guayaquil, 2	6		
Catania, 18	53		
Riga, 11	27		
Hioho, 10	485		
Rotterdam, 10	22		
Naples, 1	59		
Gothenburg, 1	75		
Genoa, 1	50		
New York, 7	10		
Hamburg, 10	310		
Copenhagen, 1	58		
Salt—			
Accra, 6 t.			
Algoa Bay, 8			
Antwerp, 178			
Barbadoes, 125			
Bonny, 14			
Boston, 150			
Buguma, 50			
Calcutta, 3,424			
Callao, 3	4 c.		
Cameroos, 10	15		
C. C. Castle, 25			
Chama, 33	2		
Copenhagen, 350			
E. London, 17	17		
Ghent, 530			
Loango, 8			
Manoa, 20			
Monrovia, 9	5		
N. Orleans, 350			
Newport News, 272	8		
Norfolk, 700			
Old Calabar, 50			
Philadelphia, 1,167			
Portland, O., 2,427	9		
Port Royal, 1,380			
Rangoon, 1,862			
Rio de Janeiro, 4	3		
San Francisco, 183	11		
Sinco, 10			
Victoria, V.I., 90			
Salt Cake—			
Antwerp, 63 t.	£66		
Newport News, 60	12 c.		
Saltpetre—			
B. Ayres, 14 c. 3 q.	£17		
Portland, O., 1 t. 3	20		
Pernambuco, 4	7		
Sheep Dip—			
Cape Town, 1 t. 13 c. 1 q.	£50		

Fremantle, 40 kgs.			
M. Video, 2	3		
B. Ayres, 33	18		
Slag—			
Demerara, 150 t.			
Soda Alkali—			
Bilbao, 35 brls.			
Boston, 15 cks.			
Cartagena, Sp., 15			
Genoa, 35			
London, Ont., 35			
New York, 70			
Oporto, 16			
Portland, Me., 33			
Rotterdam, 15			
Salonica, 7			
Toronto, 33			
Soda Ash—			
Baltimore, 301 bgs.			
Boston, 480	108		
Calcutta, 32			
Cheribon, 8			
Copenhagen, 500			
Genoa, 100			
Ghent, 50	8		
Leghorn, 3			
New York, 131	70		
Philadelphia, 34			
Piraeus, 20			
Rio de Janeiro, 138			
San Francisco, 138			
Valparaiso, 50			
Soda Crystals—			
Boston, 140 brls.			
Dunkirk, 1 dm.			
Iquique, 50 kgs.			
Pernambuco, 10			
Philadelphia, 280			
St. John's, 30			
Soap—			
Algoa Bay, 100 bss.			
Amsterdam, 50			
Antigua, 185			
Barbadoes, 230			
Bombay, 5			
B. Ayres, 1 cs.			
Cape Town, 700			
Colombo, 150			
Conakry, 20			
Curacao, 283			
Delagoa Bay, 594			
Genoa, 100			
Half Jack, 12			
Hong Kong, 600			
Kingston, Ja., 1,150			
Lagos, 452			
Las Palmas, 425			
Lisbon, 10			
Malta, 40			
Manaos, 170			
New York, 100	25		
Penang, 15 cks.			
Pt. Elizabeth, 550			
Pt. Natal, 300			
Rio de Janeiro, 120			
San Fernando, 625			
Singapore, 1,800			
Teneriffe, 218			
Trinidad, 1,550			
Victoria, V.I., 120			
Sodium Biorate—			
Genoa, 10 cks.			
Sodium Bicarbonate—			
Bombay, 20 kgs.			
B. Ayres, 50			
Calcutta, 1,125			
Fremantle, 9 cks.			
Hamburg, 15			
Havre, 110			
Hioho, 500			
Kingston, Jam., 20			
Lisbon, 50			
Malta, 10 kps.			
Marseilles, 61			
Newport News, 750	25		
Odessa, 100			
Oporto, 40			
Pernambuco, 10			
Portland, O., 230			
Rotterdam, 20			
Seville, 60			
Sulphur—			
Boston, 150 t. 4 t.			

ne—
10 dms.
7 cs.
5
ead—
70 kgs.
2 cks.
one, 40
203 pkgs.
lp—
40 bls.
oride—
5 t. 16 c. 3 q. £90
stals—
8 c. 1 q. £8
8
de—
9 c. 3 q. £9

CHESTER.

ending February 11th.

50 brls.
am Chloride—
14 cks.
33
am Sulphate—
51 t. 5 c.
uc—
2 cs. 1 trs.
Acid—
103 bls. 5 cks.

Wax—
47 cs.
237 t.
20
Bicarbonate—
50 bgs.
10 tins.
20 dms.
50 brls.

HULL.

ending February 9th.

am Sulphate—
500 bgs.
500
g Powder—
70 dms.
Soda—
30 dms.
100
122
ls (otherwise undescribed)
1,302 cks.
ia, 31 4 cs. 956 lbs.
2 20 pkgs.
rg, 4 11 6
4 20 5 pks.
328 72 pkgs.
32
96
46
1 2 1
ed Oil—
839 c.
138
rg, 100
1,106
2,109
ls (otherwise undescribed)
2 cks.
60 bgs.
Oil—
916 c.
sand, 14
ia, 296
gen, 35
55
31
266
57
32 bgs.
50 t.

Naphthaline—
Libau, 48 bgs.
Painters' Colours—
Antwerp, 24 cks. 1 cs. 6 pkgs.
Bremen, 43
Bombay, 19 161 1,383
Constantinople, 84
Christiania, 12 dms.
Copenhagen, 14
Danzig, 7
Gothenburg, 2
Ghent, 4
Hango, 1 cs. 2
Hamburg, 5
Kurrachee, 1
New York, 25 pks.
Odessa, 63
Rotterdam, 2 1 6 dms.
Rouen, 16
Reval, 120

Pitch—
Antwerp, 309 t.

Soap—
Copenhagen, 11 cs.

Tallow—
Gothenburg, 4 cks.
Hango, 160
Rotterdam, 37

Tar—
Amsterdam, 6 cks.
Bremen, 5
Gothenburg, 2
Ghent, 300
Rotterdam, 12
Rouen, 10
Stettin, 10 cs.

Turpentine—
Bombay, 105 dms.
Rotterdam, 1

Varnish—
Amsterdam, 5 cks. 1 pkge.
Antwerp, 4 cs.
Bombay, 150 dms.
Copenhagen, 1
Gothenburg, 2 3
Rotterdam, 1

Whiting—
Bombay, 13 cks.

GLASGOW.

Week ending February 14th.

Alkali—
Queensland, 11 t. 3 c.
Ammonium Sulphate—
Charente, 200 t. 2½ c.
Genoa, 40
Canada, 12 14½
Leghorn, 20 1
Bordeaux, 96 2
Hamburg, 101 7
Barcelona, 31 7½
Demerara, 78 10¼
Valencia, 363 8

Caustic Soda—
Queensland, 10 t. 12 c.

Castor Oil—
Brisbane, £28. 15s.
Chemicals (otherwise undescribed)
Sandakan, 40 glms.

Chloroform—
Brisbane, £24

Coal Products—

Benzine
France, 4 t. 16 c.

Cresote Oil
France, 402½ t.

Naphtha
France, 8 t. 2½ c.

Pitch
Genoa, 1,071 t.
U.S.A., 197 500 bgs.
Duisberg, 125 10 c.

Avilles
Bombay, 200 £123

Canada
Leghorn, 250 123 cks.
Oporto, 103 17

Bordeaux
France, 975 11
Santander, 403 11
181

Tar
Rangoon, 190 rnts.
Bombay, £91

U.S.A.
Tar and Pitch
Calcutta, £38
Madras, 92

Tar Oil
Hamburg, 2 t. 7 c.

Copper Sulphate—
Bordeaux, 123 t. 9 c.

Dyestuffs—

Extracts
Barcelona, 3 t.

Logwood
Oporto, £53

Myrabolam Extract
Barcelona, 5 t. 19¼ c.

Glucose—
Algoa Bay, 6 t. 4 c.

New York
52,012 glms. £61

Linseed Oil—
Cape Town, 350 glms.

Hong Kong
550

Kingston, Jam.
8 t. 18¼ c.

Magnesium Sulphate—
Christiania, 10 t.

Manganese—
Basle, 5 t. 19¼ c.

Manganese Oxide—
U.S.A., 15 t. 3 c.

Manure—
Genoa, £120

Spain
9 t. 18 c.

Trinidad
59 19

Valencia
36 6¼

Mica—
U.S.A., £100

Paint—
Colombo, £50

Kingstown
1 t. 4 c.

Port Limon
1 4¼

Rangoon
Havana, 67

Kingston
U.S.A., 17

Painters' Colours—
Calcutta, £280

E. London
29

Cape Town
Hong Kong, 6 t. 5 c.

Kobe
3 9

Antigua
Bermuda, £45. 15s. £122

Paraffin Wax—
Rouen, 5¼ c.

Riga
2 t.

Bordeaux
5 10

Cape Town
7 3½

Hiogo
3 11¼

Yokohama
13¼

Potash Salts—
Natal, 40 t. 1¼ c.

Potassium Bichromate—
Rouen, 10 t. 4 c.

Barcelona
580

Oporto
5 18

U.S.A.
18 14¼

Salt—
Queensland, 499 t. 15 c.

Soap—
Antigua, 11 c.

Jamaica
27

U.S.A.
17¼

Algoa Bay
1 t. 2½

Montego Bay
1 5

Sodium Bicarbonate—
Valparaiso, 2 t. 10 c.

Sodium Bichromate—
Barcelona, 15 t. 6 c.

Sulphuric Acid—
Rangoon, £200

Superphosphate—
Bordeaux, 19 t. 13½ c.

Tallow—
Transvaal, 1 t.

Sandakan
3 5 c.

Treacle—
Christiania, 13 t. 11 c.

Varnish—
Cape Town, 4 c.

White Lead—
Antwerp, 1 t. 1¼ c.

Cape Town
2 17½

Brisbane
5

Bundaberg
1 ½

Genoa
£165

Whiting—
Queensland, 31 t. 16 c.

TYNE.

Week ending February 9th.

Ammonia—
Seville, 6 c.

Ammonium Chloride—
Gothenburg, 19 c.

Ammonium Sulphate—
Valencia, 25 t.

Antimony—
Hamburg, 1 t. 10 c.

Rotterdam
4

Arsenic—
Venice, 10 t. 14 c.

Barytes—
Copenhagen, 10 c.

Bleaching Powder—
Venice, 11 t. 11 c.

Copenhagen
4 18

Rotterdam
11

Gothenburg
15 1

Caustic Soda—
Copenhagen, 12 t. 3 c.

Hamburg
1 3

Venice
2 18

Seville
25 17

Barcelona
5 1

Genoa
14 10

Gothenburg
10 3

Litharge—
Copenhagen, 6 c.

Magnesia—
Barcelona, 4 t.

Genoa
1 7 c.

Manure—
Venice, 370 t.

Valencia
363 2 c.

Genoa
380 17

Oxalic Acid—
Venice, 13 c.

Paint—
Rotterdam, 2 t.

Salt—
San Juan Del Sur, 300 t.

Soap—
San Juan Del Sur, 3 t. 15 c.

Slag—
Rotterdam, 175 t.

Soda—
Hamburg, 21 t. 11 c.

Venice
9 18

Christiania
11 7

Genoa
23 7

Gothenburg
20 1

Christiansund
5 10

Soda Ash—
Venice, 20 t.

Sodium Silicate—
Venice, 5 t. 17 c.

Superphosphate—
Valencia, 60 t.

White Lead—
Copenhagen, 3 t. 1 c.

Genoa
3 2

GOOLE.

Week ending February 6th.

Benzol—
Boulogne, 72 cks.

Chemicals (otherwise undescribed)
Rotterdam, 40 dms.

Coal Products (otherwise undes.)—
Boulogne, 1 cs. 2 cks. 25 tins.

Dunkirk
26

Ghent
2 1

Rotterdam
244

Dyestuffs (otherwise undescribed)
Ghent, 1 cs. 1 ck.

Manure—
Antwerp, 200 bgs.

Boulogne
90

Bruges
100

Painters' Colours—
Dunkirk, 4 cks.

Rotterdam
2 cs

Pitch—
Antwerp, 765 t.

GRIMSBY.

Week ending February 7th.

Coal Products (otherwise undes.)—
Dieppe, 50 cks. 1 cs.

Dyestuffs (otherwise undescribed)
Dieppe, 1 ck. 1 cs.

Painters' Colours—
Hamburg, 5 cks.

Rotterdam
15

Pitch—
Antwerp, 50 t.

PRICES CURRENT.

WEDNESDAY, FEB. 23rd, 1893.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may

Acids:—

	£	s.	d.
Acetic, 25% and 40%	per cwt.	6.9	10/-
Glacial	"	47	6
Arsenic S.G., 2000°	"	0	15 0
Fluoric	per lb.	0	0 3 1/4
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0 10
(Cylinder), 30° Tw.	"	0	3 0
Nitric 80° Tw.	per lb.	0	0 1 1/4
Nitrous	"	0	0 1 1/4
Oxalic	nett	0	0 3 1/4
Phosphoric, 1750°	"	0	0 11
Picric	"	0	0 10
Sulphuric (fuming 50%)	per ton	15	10 0
(monohydrate)	"	5	10 0
(Pyrites, 168°)	"	3	0 0
(150°)	"	1	5 0
(free from arsenic, 145°)	"	1	6 0
Sulphurous (solution) S.G. 1025	"	3	0 0
Tannic (pure)	per lb.	0	0 11
Tartaric	"	0	0 11
Arsenic, white powdered	nett	per ton	14 10 0
Alum (loose lump)	"	4	17 6
Alumina Sulphate (pure)	"	4	15 0
Aluminaferic	"	2	7 6
Aluminium	per lb.	0	3 0
Ammonia, Anhydrous	"	0	1 4
" 18c=28° B.	per lb.	0	0 3
" 24° B.	"	0	0 2 1/4
" Carbonate	nett	0	0 3 1/4
Muriate	per ton	22	10 0
(sal-ammoniac) 1st & 2nd	per cwt.	39/-	& 37/-
Nitrate	per ton	41	0 0
Phosphate	per lb.	0	0 10 1/4
Sulphate (grey) London	per ton	11	2 6
(grey) Hall	"	11	3 9
Aniline Oil (pure)	per lb.	0	0 5 1/4
Aniline Salt	"	0	0 4 1/4
Antimony	per ton	31	15 0
(tartr emetic)	per lb.	0	0 8
(golden sulphide)	"	0	0 10
Barium Chloride	per ton	6	10 0
Carbonate (native)	"	3	5 0
Sulphate (native levigated)	"	45/-	to 75/-
Bleaching Powder, 35%	nett	7	2 6
Liquor, 7%	"	3	10 0
Bisulphide of Carbon	"	11	0 0
Chromium Acetate (crystal)	per lb.	0	0 6
Calcium Chloride	per ton	2	2 6
China Clay (at Ramcorn) in bulk	"	15/-	to 30/-

Coal Tar Products and Dyes:—

Alizarine (artificial) 20 %	.. .. .	net	per lb.	0 0 8
Magenta	.. .. .	"	"	0 3 9
Antimony, 30 % A, L.C.B. London	.. .. .	per unit	per cwt.	0 1 1
Benzol, 90 % nominal	.. .. .	"	per gallon	0 1 1
50/90	.. .. .	"	"	0 1 1
Carbolic Acid (crystallised 40°)	.. .. .	"	per lb.	0 0 5 1/4
(crude 60°)	.. .. .	"	per gallon	0 1 8
Cresote (ordinary)	.. .. .	"	"	0 0 2
(Altered for Lucigen light)	.. .. .	"	"	0 0 2
Crude Naphtha 30 % @ 120° C.	.. .. .	"	"	0 0 5
Cresote Oil, 25° Tw.	.. .. .	"	per ton	2 10 0
Pick, L.C.B. Liverpool or Garston	.. .. .	"	"	1 13 0
Solvent Naphtha, 90 % at 160°	.. .. .	"	per gallon	0 1 2
Lucigen and Wells Oils	.. .. .	"	"	0 0 2 1/2
Apper	.. .. .	"	per ton	39 10 0
" Sulphate	.. .. .	"	"	15 10 0
" Oxide (copper scales)	.. .. .	"	"	39 0 0
Aluminate (crude)	.. .. .	"	"	15 0 0
(distilled S.G. 1250°)	.. .. .	"	"	40 0 0
Solvent	.. .. .	"	nett, per oz.	0 0 9
Iron Sulphate (copperas)	.. .. .	"	per ton	1 5 0
" Sulphide (ammonium slag)	.. .. .	"	"	2 0 0
Lead (sheet) for sale	.. .. .	"	"	10 12 6
" Litharge Flake (ex ship)	.. .. .	"	"	13 5 0
" Aluminate (white)	.. .. .	"	"	24 15 0
" (brown)	.. .. .	"	"	14 15 0
" Carbonate (white lead) pure	.. .. .	"	"	16 0 0
" Mercur	.. .. .	"	"	19 0 0

Lime, Acetate (brown)	per ton	5	12
" " (grey)	"	8	15
Magnesium (ribbon and wire)	per oz.	0	2
" Chloride (ex ship)	per ton	2	10
" Carbonate	per cwt.	1	17
" Hydrate	per ton	17	0
" Sulphate (Epsom Salts)	per ton	3	0
Manganese, Sulphate	"	17	15
" Borate	per cwt.	2	15
" Ore, 70 %	per ton	4	5
Methylated Spirit, 61 $\frac{1}{2}$ O.P.	per gallon	0	1
Naphtha (Wood), Solvent	"	0	3
" Miscible, 60 $\frac{1}{2}$ O.P.	"	0	3
Oils:—			
Cotton-seed	per ton	18	10
Linseed	"	22	0
Petroleum, American	per gallon	0	0
Stearine	per ton	27	0
Phosphorus (yellow)	per lb.	0	2
" (red)	"	0	2
Potassium (metal)	per oz.	0	3
" Bichromate	nett per lb.	0	0
" Carbonate, 90% (ex ship)	per ton	17	5
" Chlorate	per lb.	0	0
" Cyanide, 98%	"	0	1
" Hydrate (Caustic Potash) 80/85 %	per ton	21	10
" " (Caustic Potash) 75/80 %	"	30	0
" " (Caustic Potash) 70/75 %	"	19	10
" Nitrate (refined)	per cwt.	1	2
" Permanganate	per cwt.	3	0
" Prussiate Yellow	per lb.	0	0
" Sulphate, 90 % (ex ship)	per ton	9	15
" Muriate, 80 % (do.)	"	8	7
Silver (metal)	per oz.	0	2
" Nitrate	"	0	2
Sodium (metal)	per lb.	0	2
" Carb. (refined Soda-ash) 48 %	nett per ton	4	15
" " (Caustic Soda-ash) 48 %	"	4	0
" " (Carb. Soda-ash) 48 %	"	4	0
" " (Alkali) 58 %	"	3	13
" " (Soda Crystals)	"	2	5
" Acetate (ex-ship)	"	14	5
" Arseniate, 45 %	"	11	0
" Chlorate	per lb.	0	0
" Borate (Borax)	nett, per ton	30	0
" Bichromate	per lb.	0	0
" Hydrate (77 % Caustic Soda) (f.o.b.)	nett per ton	10	0
" " (74 % Caustic Soda)	"	8	15
" " (70 % Caustic Soda)	"	7	15
" " (60 % Caustic Soda)	"	6	15
" " (60 % Caustic Soda, cream) (f.o.b.)	"	6	12
" Bicarbonate	"	6	10
" Hyposulphite	"	5	10
" Manganate, 30%	"	16	0
" Nitrate (95 % ex-ship Liverpool)	per cwt.	0	8
" Nitrite, 98 %	per ton	29	0
" Phosphate	"	15	0
" Silicate (glass)	per ton	5	2
" " (liquid, 100 $\frac{1}{2}$ Tw.)	"	4	5
" Stannate, 40 %	per cwt.	3	2
" Sulphate (Salt-cake)	per ton	0	17
" " (Glauber's Salts)	"	1	5
" Sulphide	"	8	0
" Sulphite	"	3	7
Strontium Hydrate, 100%	"	3	10
Sulphocyanide Ammonium, 95 %	per lb.	0	0
" Barium, 95 %	"	0	0
" Potassium	"	0	0
Sulphur (Flowers)	per ton	7	3
" (Roll Brimstone)	"	5	3
" Brimstone: Best Quality	"	3	15
Superphosphate of Lime (26%)	"	2	7
Tallow	"	25	10
Tin Crystals	per lb.	0	0
" English Ingots	per ton	63	10
Zinc (Spelter)	"	13	47
" Chloride (solution, 100 $\frac{1}{2}$ Tw.)	"	5	7

THE CHEMICAL TRADE JOURNAL

AND
OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

06.

SATURDAY, MARCH 2, 1895.

Vol. XVI.

Contents.

PAGE	PAGE
the Crane..... 141	Miscellaneous Chemical Market .. 149
olidation of Terpenes .. 142	Liverpool Mineral Market .. 149
l Oils..... 142	The Metal Markets .. 149
mical Industry .. 143	Liverpool Oil and Colour Market.. 149
anda .. 144	West of Scotland Chemicals .. 149
panies .. 145	Tyne Chemical Report..... 150
mical Trade..... 146	Hull Paint, Oil, and Colour Report 150
' Column .. 147	New Companies..... 150
ply of London and .. 147	The Patent List..... 150
..... 148	Gazette Notices..... 151
nia Products .. 148	Imports .. 151
ure Material .. 149	Exports .. 153
	Prices Current .. 156

ADVERTISEMENT.

le, one C.I. TANK (new), 9ft. x 8ft. x 2 ft 6in.
cond-hand STEAM PUMP, equal to new; will deliver 800 gallons
ress, "Tank," *Chemical Trade Journal* Office, Manchester.

le, 15 Tons Galvanisers' FLUX SKIMMINGS.
bout 10% Ammonium Chloride and 50% Zinc; £3. per ton f.o.r. Moses
-Address, "Skimmings," *Chemical Trade Journal* Office, Manchester.

ATE of SODA for Sale.—Small lot of above;
42s. per cwt. to clear out.—Address, "Stannate," *Chemical Trade*
Manchester.

FACTURING Chemist, well up in Assaying,
sires post as MANAGER OF WORKS; 14 years' experience as
—Replies to "Metal," c/o Oldfield Pattinson and Co., Manchester.

NSIBLE, capable Man, accustomed to
Management, WANTS WORK. General technical and chemico-
perience; energetic, adaptable; quick at new subjects; high
dress, "Z," 18, Noel-street, Islington, London, N.

Notices.

munications for the *Chemical Trade Journal* should be
nd Cheques and Post Office Orders made payable to—

BROS., 32, Blackfriars Street, MANCHESTER.

Our Registered Telegraphic Address is—

"Expert, Manchester."

ms of Subscription, commencing at any date, to the
Trade Journal,—payable in advance,—including postage
of the world, are as follows:—

y (52 numbers) 12s. 6d.
Yearly (26 numbers) 6s. 6d.
terly (13 numbers) 3s. 6d.

cations for the Editor, if intended for insertion in the
k's issue, should reach the office not later than Tuesday

reports, and correspondence on all matters of interest to the
nd allied industries, home and foreign, are solicited.
nts should condense their matter as much as possible,
side only of the paper, and in all cases give their names
es, not necessarily for publication. Sketches should be
rate sheets.

THE WOLF AND THE CRANE.

A wolf having a bone in its throat hired a crane for a great sum to extract it.
Having done so, the crane demanded the reward. The wolf, grinning and
grinding his teeth, refused it, adding: "You ought to consider yourself amply
rewarded by having been allowed to place your neck in a wolf's mouth and
withdraw it again in safety."—Æsop.

DESPITE the fact that candle-makers have decided to
raise the price of candles to £4. 13s. 6d. per ton, the
Scotch-American Combine in solid paraffin still remains
unconcluded. Altogether the affair does not look very
promising. Those candle-makers who have not joined the
association intend raising their prices along with the other
makers, but do not appear to have any anxiety about being
able to get all the scale they are likely to want at a reason-
able price outside the Combine. This is not very satisfactory,
as the prospect forbodes discontent amongst the candle-
makers themselves. Anything of this nature is prejudicial to
the success of the Paraffin Combine, since the experience of
the past has shown that disaffection among the candle-
makers is fatal to any combination of this kind.

There are, however, other aspects of still graver importance
to be considered in connection with this proposed co-
operation with the American Standard Oil Company. An
increased income to the tune of £40,000. per annum must
undoubtedly prove very tempting to the Scotch Oil Com-
panies, but knowing the history of former agreements with
the Standard Oil Company, it is surprising that great hopes
should be built upon another alliance with this modern
Polyphemus. It is even still more surprising that any real
good is expected when it comes to be known that one of the
terms of the agreement is that the Scotch producers are to
cease pressing the flash-point question. There is nothing
philanthropic about the Standard Oil Company. If they are
to assist the Scotch in raising the price of solid paraffin it is
evident they require a very substantial *quid pro quo*. We
know the vital importance to the American Company
of the flash-point being left alone just now, and in
comparison, what is the value of the sop which they
hold out to the Scotch producers? Comparatively, the
value is paltry, all the good that is to result depending
upon the success of a rickety one-legged scheme, clothed in
threadbare patchery. And this is so for more reasons than
one. Apart from the Standard Oil Company being powerless
to prevent candle-makers on this side eventually accomplish-
ing the collapse of the present Combine, what is the feeling
about the matter on the other side? The prospect of an in-
creased price for scale is actually distasteful to American
producers. They have good markets, and are in no way
disposed to impede sales by raising the price. So opposed
are the principal producers to such a step, that if the price is
advanced, it will be made up on their side by giving the con-
sumers a better quality of semi-refined wax for the money.
In the light of these additional facts the offer of the Standard
Oil Company appears very meagre indeed, and it is futile to

suggest that they do not know of this feeling in America. It is, however, imperative that they should thwart the further elucidation of the flash-point question, and the proposed Combine in scale affords a most convenient means of silencing the Scotch people, because there is every prospect of its lasting just long enough to enable the Company to bilk the Petroleum Inquiry Committee, and then breaking up, leaving the Company free handed to manipulate what will amount to a guaranteed monopoly for another 10 years or so. And what will have happened to the Scotch oil industry in the meantime? The Standard Oil Company is an old campaigner, and knows when to play a trump card. The Scotch producers have, therefore, now to choose between exposing the Standard Oil Company for having "revoked," or accepting hush money in the shape of a possible advance in scale of $\frac{1}{4}$ d. per pound.

The present discussion of the flash-point has recurred at a critical time. It is an open secret that supplies of crude petroleum are getting scarce in America. For three years the consumption has exceeded the production, which is still increasing, as the imports into this country for 1894 show. In consequence prices are being advanced, and will have to be still further. The Standard Company will therefore no longer be able to pursue their policy of remorselessly crushing rivals by flooding the market with oil at unremunerative prices, in the hope of recouping by a proportionate advance. If, therefore, the Scotch producers will take the bait which is now held out to them, all the most important evidence in favour of a higher flash-point will be suppressed. The report that Mr. Spencer, of the L.C.C., has just prepared to bolster up the impeccability of the so-called "safety" lamp will be made the most of, and the flash-point left at 73° , although the proceedings of the Select Committee will have been rendered farcical by their glaring one-sidedness. If ever a crushing and conclusive argument was wanted to prove the dangerous nature of the American oil sent into this country with a 73° flash-point, it is to be found in the undisguised fear manifested by the Standard Company lest we should adopt the standards of safety now so largely used in America. It is singularly unfortunate that the officers of the L.C.C. are so anxious to assist the Americans in throwing the blame on to the lamp, instead of the oil, though this point is not so difficult to comprehend as the fact that the L.C.C. itself seems quite disposed to allow the American faction to have everything its own way. It seems to us that if full evidence is not to be given on both sides, the present inquiry ought to be abandoned, instead of allowing all the evidence of the one side to be heard and printed, while only the fragments of the evidence available on the other side will be recorded. To revert to the value of the offer which the Standard Co. now make. How long can they maintain the agreement they are so desirous to make? And, further, how far can the Company be trusted to do their best to support such an agreement? Already the iron hand can be seen peeping through the silken glove in their endeavour to grasp the whole Continent as a "dumping ground" instead of France only; an act which would wipe off £15,000. of this colossal profit of £40,000. for a start. This sally has caused the Scotch companies to "jib," so that, fortunately, there is yet a chance of the overtures of these wily monopolists being repulsed. The wisdom of so doing must be apparent to all those who will take the trouble to penetrate the glare of this promised profit on scale, and look into the darkness that lies behind it. To those who are content to be dazzled by the glare, all we can say is that we place the same

estimate upon the offer of the Standard Company that S. Gilbert puts upon a "baronet's title," which, to pervert original, amounts to this:

Oh! the American offer's exceedingly nice,
But the bribe is uncommonly dear at the price!

THE AERIAL OXIDATION OF TERPENES ESSENTIAL OILS.

(Continued from page 115.)

PREPARATION, &c., OF THE BODY $C_{10}H_{16}O_8$.

WHEN any terpene is oxidised by air in the presence of water, when the oxidised oil is shaken up with water, the solution is always found to contain hydrogen peroxide and a substance of the composition $C_{10}H_{16}O_8$, which latter is obtained (on evaporating the water at $100^{\circ}C.$) in the form of a clear light-brown coloured substance. This substance is quite mobile at $100^{\circ}C.$, but at the ordinary temperature of the atmosphere it has the consistency of soft pitch, and is bitter to the taste.

A quantity of Russian turpentine which had been oxidised by a current of air at $60^{\circ}C.$ until its specific gravity was 0.950 was shaken with distilled water, and the aqueous extract was, after filtration, evaporated to dryness. The residue thus obtained was dried in a water oven and analysed.

I.	0.4171 gram gave 0.3291 gram H_2O and 0.9945 gram CO_2 .
II.	0.3663 " " 0.2865 " " 0.8657 " "
III.	0.2900 " " 0.2297 " " 0.6934 " "
	(1) Per cent. (2) Per cent. (3) Per cent.
C.....	65.03 64.45 65.21
H.....	8.76 8.69 8.80
O.....	26.21 26.86 25.99

Taking the average, we can calculate as follows:—

Per cent.	÷ Atomic weights.	÷ C = 12.
C.....	64.91	5.41
H.....	8.75	8.69
O.....	26.35	1.647
		10.0
		16.2
		3.0

Next, a litre of Russian turpentine, which had been oxidised in the presence of water, was taken and shaken up with a litre of water at intervals for three days. After allowing the mixture to stand overnight, the aqueous extract was decanted off and filtered. The solution thus obtained was found to contain hydrogen peroxide. On evaporating to dryness the residue weighed 18 grams. A portion of this residue was dried in the water oven during three days, which it was analysed. On the third day in the oven it lost 10 per cent. in weight, and it is probably slightly volatile at $100^{\circ}C.$ analyses were made.

I.	0.1485 gram gave 0.3598 gram CO_2 and 0.1922 gram H_2O .
II.	0.1657 " " 0.3921 " " 0.1331 " "
III.	0.2507 " " 0.6000 " " 0.2017 " "
IV.	0.2371 " " 0.5660 " " 0.3918 " "

The average of these results gives the following figures:—

Per cent.	÷ Atomic weights.	÷ C = 12.
C.....	65.96	5.49
H.....	8.995	8.73
O.....	25.74	1.609
		10.0
		15.73
		2.9

In another experiment, some American turpentine was oxidised in the presence of water, and the clear aqueous solution was evaporated nearly to dryness. The calcium sulphate originally present in the oil was then removed by means of alcohol, and the residue obtained by evaporating down the alcoholic solution was dried at $100^{\circ}C.$ and analysed.

0.3408 gram gave 0.8111 gram CO_2 and 0.2695 gram H_2O .

Per cent.	÷ Atomic weights.	÷ C = 12.
C.....	64.91	5.41
H.....	8.78	8.69
O.....	26.31	1.644
		10.0
		15.73
		3.04

An analysis of the residue obtained on shaking up some old American oil with water and then evaporating the aqueous solution to dryness gave the following figures:—

0.3364 gram gave 0.8163 gram CO_2 and 0.2743 gram H_2O .

Per cent.	÷ Atomic weights.	÷ C = 12.
C.....	66.13	5.51
H.....	9.06	9.06
O.....	24.76	1.548
		10.0
		16.2
		2.8

Some French turpentine was now oxidised in the presence of water until it had the specific gravity 0.950, and the aqueous solution was evaporated nearly to dryness. The residue was then dissolved in absolute alcohol in order to get rid of the $CaSO_4$ originally contained

Official Memoranda.

(From the Board of Trade Journal.)

CUSTOMS TARIFF OF BRITISH INDIA.

THE following is a special abstract of the rates of Customs duty now leviable in British India:—

ARTICLES.	TARIFF VALUATION.	DUTY.
Salt	Maund of 82½ lb.	Present rate not more than 12 Annas.
Sulphuric Acid	Per lb.	0 2 5 per cent.
Alkali country (Sajji-Khar)	Per cwt.	1 8 "
Alum	"	5 0 "
Arsenic	"	21 8 "
Sodium Bicarbonate	"	7 0 "
Ferrous Sulphate	"	3 0 "
Explosives	"	ad val. "
Salammoniac	Per cwt.	37 0 "
Sulphate of Copper	"	15 8 "
Sulphur Flour	"	6 0 "
" Roll	"	5 12 "
" Rough	"	4 8 "
Chemicals otherwise undescribed, including Saltpetre and Borax	"	ad val. "
Cinchona Alkaloids	Per lb.	Free.
Dry Alizarine, 40%	"	1 7 "
" 180%	"	2 12 "
Liquid Alizarine, 10%	"	0 5 "
" 20%	"	0 10 "
Aniline Dye, Liquid	"	0 9 "
" Dry	"	ad val. "
Myrabolams	Per cwt.	4 0 "
Madder	"	7 0 "
Orchella Weed	"	5 0 "
Cocoanut Oil	"	16 0 "
Petroleum	Per gall.	— 1 anna.
Other Oils and Paraffin Wax	Per cwt.	ad val. 5 per cent.
Candles, Paraffin	Per lb.	0 6 "
" Spermaceti	"	0 7 "
" Wax	"	1 0 "
" Other Sorts	"	ad val. "
Chalk, Common	"	" "
French Chalk	"	" "
Disinfectants	"	" "
Manure (all kinds)	"	Free.
Oil Cake and Fodder	"	" "
Prussian Blue	Per lb.	1 0 "
Verdigris	Per cwt.	70 0 "
White Lead	"	16 0 "
Zinc White	"	25 0 "
Pitch	"	7 0 "
Tar	"	6 0 "
Wood Pulp	"	Free.
Soap	"	ad val. "
Tallow and Stearine	Per cwt.	20 0 "

THE ARGENTINE TARIFF.

The following is an abstract of the import duties under the Customs Tariff of the Argentine Republic for 1895:—

Goods paying 10 per cent. *ad valorem*: White lead, pure metallic antimony, impure barytes sulphate, coal tar and pitch, mineral pitch.

Paying 5 per cent. *ad valorem*: Sodium carbonate, industrial silicate, crude nitrate and sulphate of soda, caustic soda, crude sulphate of alumina.

Paying 2½ per cent. *ad valorem*: Crude sulphur, fibre or wood pulp for paper making.

The following pay special duties: Coconut oil 4 cents. per kilo., palm oil 4 cents., coarse salt 20 cents. per hectolitre, fine salt in bags or barrels 1 cent. per kilo., in jars 2 cents.

RESIN AND TURPENTINE PRODUCTION IN INDIA.

The production of resin and turpentine from Indian pines is the subject of one of the Indian series of the Handbooks of Commercial Products. The question of securing a market in Europe for these two rather important staples of commerce was taken up by the Government of India in 1888, and a letter on the subject was addressed to the North-Western Provinces Government. The Conservator of Forests

in the school circle was accordingly requested to set on foot experiments in certain directions indicated.

Investigations were undertaken to ascertain how far it was possible, by devising cheap, rapid, and exhaustive methods of distillation, and of the preparation of the bi-products of distillation, and also by studying the conditions under which the trees give maximum yield, to ensure the desired result.

Most people are doubtless aware of the extensive industry carried on in France and America in resin and turpentine, owing to the facilities that exist in these countries for their production. That the resin as produced by the tree is subjected first to liquefaction and filtration, by which means the oil of turpentine is separated, the latter is then distilled and yields spirits of turpentine and resin. That the spirits of turpentine are largely used in the mixing of paints, the manufacture of varnishes, caoutchouc, and as well as being sively dispensed in the pharmaceutical chemist's shop; and that the resin is still in considerable demand for soap-making (American most highly valued for this purpose, chiefly owing to its fineness), printers' ink, the coarser description of varnish and sealing-wax, lining barrels, bending lead, pipes, &c.

India at present depends chiefly on America for her supplies of turpentine, which are shipped from England. What is sold in Calcutta market as American turpentine is, however, said to be being largely adulterated in England with kerosene, naphtha, &c., and it is almost unnecessary to add that in common with every other commodity capable of being so dealt with, it is said to be further sophistication in India. Probably the same state of affairs exists in Bombay by use and custom; therefore, the traits of the article have become practically unknown in India, consequently there is little demand for it, purchasers, in fact, looking more to quantity than quality. It is further stated that the little genuine turpentine found in the hands of local merchants is imported direct from America, not through the United Kingdom. In illustration of the fact that unadulterated turpentine is, to all intents and purposes, unknown in Calcutta, a case is quoted in which a sailor brought some to the market and offered it for sale, but found the greatest difficulty in disposing of it on account of its odour being different to the made-up stuff sold in the bazaars. It is pointed out that the Dehra turpentine is of very superior quality, but it cannot be sold at the highest price obtained for the best imported article.

SALT PRODUCTION IN BRITISH INDIA.

The following particulars of the salt production of British India recently been published by the Indian Government:—

Production.—The total quantity of salt produced in India in 1893 was a little over 21½ millions of maunds compared with 23½ millions in the preceding year, the production in Madras having been on a reduced scale, owing to seasonal causes. This quantity was augmented by 11,531,129 maunds of imported salt, the total quantity produced and imported amounting to 33,129,207 maunds, about 10 per cent. of the whole being produced in India. Importation is practically limited to salt brought to Bengal and Burma from England, Germany, other countries in Europe, Aden, Muscat, Jeddah, and a few other places. Only a quite insignificant quantity is imported elsewhere than in Bengal and Burma, but there is also a trifling quantity of Himalayan import. [Maund = about 82 lb. avoirdupois.]

Consumption and Revenue.—In 1893-94, 33,628,736 maunds of salt paid duty, the duty realised amounting (exclusive of miscellaneous receipts) to Rs. 8,051,545, the quantity being 4·06 per cent. and the duty 4·27 per cent. less than in the previous year.

SALT DUTY IN BULGARIA.

Sir A. Nicholson, Her Majesty's Agent and Consul-General in Sofia, in a despatch to the Foreign Office, states that the National Assembly have passed a special law imposing an excise duty of 1 franc per 100 kilograms on native sea salt and excise and Customs duties, amounting to nine francs per 100 kilos on all foreign salt, whether sea or rock, on its importation into the principality.

THE CANADIAN WOOD-PULP INDUSTRY.

All the elements necessary for the success of the manufacture of pulp exist in Canada, which offers peculiar advantages to the industry. Immense forests of the Dominion contain a supply, practically inexhaustible, of wood well adapted for the manufacture of pulp. The woods are of superior quality and much esteemed by the manufacturers of the United States, who, in 1893, purchased them to the value of \$454,253. The proof that Canadian woods are excellent for the manufacture of pulp is to be found in the increased quantity of Americans purchase each year in order to supply their own wants. The exportation of pulp-wood (Canadian) to the United States amounts to four years ago. In 1890 the export was valued at \$5,107,000, in 1891 at \$5,107,000, in 1892 at \$5,107,000, and in 1893 at \$5,107,000.

536 dols., in 1892 at 183,312 dols., and in 1893 at 454,253 dols. The returns for 1894 have not yet been published, but it is expected that the export during that year will prove to be larger than in

regards the quantity and quality of its timber, the position of Canada is superior to that of the United States. It is also equal, if not superior, to that of Scandinavia, which has up to the present time displaced the wood-pulp industry, which industry employs 69,000 men in Sweden and Norway. If we may judge from the prices of wood pulp in England, Canadian timber makes a better pulp than that from Scandinavian countries, since in 1893 Canadian pulp was sold in England at an average price of 24.80 dols. per ton, as compared with 27.77 dols., which was the price for that coming from Sweden and Norway.

In regards the water power it is practically unlimited in those regions where the wood pulp is in greatest abundance, notably in the eastern part of the province of Quebec and several portions of the maritime provinces. The region of Lake Superior offers many resources under development, and the newspapers announced some weeks ago that American capitalists were taking measures in order to utilise the chutes of the River St. Lawrence, with the object of establishing pulp works.

The cost of labour in several portions of the province of Quebec is no higher than in Sweden and Norway, and owing to the facilities of transport which the large rivers of that country offer, the cost of wood pulp is as low, if not lower, than in Scandinavia. Canada is, therefore, in an excellent position, to succeed in the pulp industry.

It is, however, to make an industry in every way successful, it is not only that it should be worked under favourable conditions, but also that it should have markets available for the disposal of its products.

The American market is practically closed by the American tariff, which does not allow free access to the important markets of England, France, and Germany. In 1893 Great Britain imported 215,920 tons of wood pulp, and France 106,049 tons, which forms a total of 321,969 tons for these two countries alone. Belgium, Spain, Italy, and the other countries imported wood pulp to the extent of 200,000 tons, so that the total imports exceed 500,000 tons per annum. This import shows a constant increase. Thus the imports into England were 115,000 tons in 1888, 156,609 tons in 1890, 190,946 tons in 1892, and 215,920 tons in 1893. This makes an increase of 77 per cent. in 1888. In the eleven months ending the 30th of November, 1894, the imports of wood pulp amounted in quantity to 255,466 tons as compared with 115,000 tons in 1893 and 168,598 tons in 1892.

The increase might continue for a long time before encumbering the market. Thus, in 1893, in addition to the 215,920 tons of wood pulp mentioned above, England imported, in order to complete the supply of its paperworks, 20,750 tons of cloth and cotton rags, 10,000 tons of esparto, and 30,358 tons of pulp made from rags and materials, or a total of 236,558 tons. However, this is not sufficient for the manufacture of the paper which is consumed in England, since the statistics show that, during this same year 1893, 1,000,000 tons of paper and cardboard were imported into the country. The production of the necessary pulp in order to make this paper and cardboard will give work to 18 factories requiring a motive power of 500 to 3,000 horse-power each, and in order to produce the capable of replacing the 236,558 tons of other raw materials, and in order to complete the supply of the paperworks of Great Britain there will be wanted 30 factories of similar capacity. At the present time there are only two establishments within Canada which export to England: one in the province of Quebec, worked by Americans, and one in Nova Scotia. There is a sufficiently large market in England for the production of 40 factories, and then still always remain the markets of the other European countries, which can absorb annually more than 200,000 tons. These conclusions, based on actual facts, may give some idea of the progress of the field of operations opened to the Canadian pulp industry.

EFFECT OF TEMPERATURE IN REFINING PETROLEUM.—According to Aloziecki, when petroleum is being treated with sulphuric acid, the temperature at which the acid acts, the better is the result of the refined petroleum. This had been proved by a series of experiments, showing that the product at 0° being colourless and distinctly yellow. It was also found that by working in the cold the product was increased. The sulphuric acid dissolves impurities and oxidises the heavy parts of the mineral oil. While the reaction is but little affected by low temperatures, the latter being higher, sulphurous acid being then extensively separated. At the same time the petroleum becomes more charged with resinous and oxidized products. This is the cause of the yellow colour of the kinds of petroleum, that cannot be removed by washing with

Reports of Companies.

MESSRS. BRUNNER, MOND AND CO., LIMITED.

The twenty-eighth half-yearly meeting of the shareholders of Brunner, Mond and Co., Limited, of Winnington, Northwich, was held last week, in the Law Rooms, Cook-street, Liverpool. Mr. John T. Brunner, M.P. (chairman of directors), presided, and there was a large attendance.

The directors reported that the balance-sheet and profit and loss account, certified by the auditors, showed a balance to the credit of profit and loss account on the working of the half-year ended on 31st Dec., 1894, of £145,075. 4s. 2d., which, with the amount of £89,592. 8s. 10d. brought forward from the previous half-year, made a total of £234,667. 13s. The directors proposed to deal with the above balance as follows:—Dividend on the preference capital, at 7 per cent. per annum, £15,225.; dividend on the ordinary capital, at 30 per cent. per annum, £127,324. 17s. 6d.; amount to be written off patents account, £2,560.; balance to be carried forward, £89,617. 15s. 6d.; total, £234,667. 13s. It would be noticed that the debt owing by the holders of the 22,500 ordinary shares issued in 1884, for the premium of £10. per share, had, during the last half-year, been paid off, and the item finally disappeared from the balance-sheet.

The Chairman said that he had no doubt they would agree with him that the balance-sheet and report were marvellous productions, and that the shareholders, in common with the directors, would consider themselves extremely fortunate, especially in view of the unhappy results of other businesses. (Hear, hear.) They would notice that under the heading of property and assets there was this year a deduction, and not an addition, to the first item. This he mentioned not because it was a very important matter in itself, but because it was a further illustration of the great care with which the capital account was conducted. The item deducted was £226. 11s. 6d., which represented some pumping machinery that had been removed from a place where it was no longer wanted, and it appeared lumped up in the stock-sheet. The addition this half-year to the alkali works comprised part of an erection for caustic works at Winnington, and a further expenditure, not as yet at an end, at Silvertown. He trusted that the next item, namely, the premium on 22,500 new ordinary shares, would be understood by all, as it was explained in the report. He thought it would now be perfectly clear. It was considered as a debt owing by the holders of those shares to the company, and it now finally disappeared from the sheet. Having explained the arrangement of other items in the balance-sheet, he concluded by moving the adoption of the report, and the payment of a dividend at the rate of 7 per cent. per annum, upon the preference shares, and 30 per cent. per annum, upon the ordinary shares on the paid-up capital.

Mr. H. Coghill seconded the motion.

In reply to a shareholder, the chairman said the works at Silvertown were not quite completed, but those that were finished were in full work, and the whole of the output was being placed upon the market. The report was adopted.

Mr. George Jones moved "That the directors, other than the managing directors, be paid £500. for their services during the half-year ending December 31, 1894." He said that he was sure all the shareholders felt very much pleased with the returns they were receiving, especially as they saw that the company had fairly, honestly, and squarely earned 30 per cent. (Hear, hear.) There were very few commercial concerns that could equal that return.

Mr. J. R. Darsie seconded the resolution, which was carried.

On the motion of the Chairman, seconded by Mr. C. J. Galloway, the meeting re-elected Messrs. E. Milner, C. M. Holland, H. Schellhass, and John Crosfield as directors.—The Chairman next submitted the recommendation that Mr. Alfred Moritz Mond, of London (son of Mr. Ludwig Mond), be elected as a director, remarking that he was a large shareholder, and took a deep interest in the affairs of the company. It was always well, the chairman added, that limited companies should have as directors men who had a large stake in their welfare. (Hear, hear.) This was seconded by Mr. Galloway, and carried unanimously.

Messrs. T. W. Read and Co. were re-appointed accountants, and the proceedings terminated with a vote of thanks to the chairman and the directors.

SALT UNION, LIMITED.

The annual report of the directors of this company for the year ended 31st December states:—The gross tonnage of salt delivered by the Union in 1894 was 1,284,000 tons. The great depression in the large manufacturing industries in Lancashire reduced the demand for salt for manufacturing purposes to a point even lower than that of 1893, when the coal strike paralysed these industries during several months. Nevertheless, the trade as a whole shows an increase upon that of the

Paris and Whiting.....	112	205	436
on Ore	72,344	73,616	59,602
.....	104	303	134
Mill Cinders.....	14,039	32,723	9,555
l Molasses.....	55	62	106
and Resin.....	14	418	805
Red Ochre	414	492	136
nd Acids	5	168	74
lp	—	—	671

esting to know to or from what countries the chief ship-
ae of the more important items go or come, and we there-
the following special analysis:—

—As in former years, Belgium and Holland supplied more
he barytes. The same source also supplied the largest
drysalter's stores—viz., 476 tons. Of glucose, 286 tons
U.S.A.; of cotton and linseed cake, 444 tons from Russia
om Germany; of phosphates, 10,976 tons were from
l 4,527 from Belgium and Holland; of sulphur ore,
ed 58,001 tons and Portugal 11,560; of salt, Germany
ons. Of mineral oil, the U.S.A. contributed 16,745 tons,
ance on last year; and Russia 824, being a marked
ere were 1,103 tons of wood pulp imported from Norway.

—The largest amount of alkali was sent to Sweden,
Holland come next, followed by Russia; the U.S.A. only
s, as compared with 596 last year. In bleaching powder,
the lead with 5,360 tons, followed by Belgium and Hol-
lony, U.S.A., and Norway. Russia, however, took less
this year, the States being first with 2,204 tons; after
nd Malta, Spain and Gibraltar, Russia and Germany come
shipments. Hyposulphite of soda went chiefly to
S.A., and Russia. The shipments of soda crystals to
a heavy decline, being but 978 tons, as against 2,515
elgium and Holland head the list in this item, followed by
l Denmark and Iceland. Sweden and Norway respec-
the largest amounts of sulphate of soda. In sulphur,
Sweden show the largest shipments, the increase to
compared with last year, being 1,505 tons. Patent fuel
ed falling off, the largest shipment being 30 tons to Spain
s, against 650 tons last year.

Paper-Makers' Column.

ESPARTO IN 1894.

S the most distinctive characteristic of the trade in this com-
uring the past year has been the undiminished extent of the
as compared with 1893, notwithstanding the persistent
is shrinkage of value. Both Spanish and Algerian receipts,
ark an increase of 6,700 tons, or nearly 5½ per cent., over
ear, and yet the course of values of these descriptions has
ly towards a lower level. There can be little doubt that
e trade has been unremunerative—even perhaps more so
—to shippers and importers, while it is probable that
ally dissatisfied with the year's working. The increase
s of wood-pulp, both of Continental and American origin,
nded use of that material in English mills, have had a
influence on the consumption of esparto. This, of course,
e pronounced in some districts than in others, as, a com-
e imports at Liverpool and Cardiff for 1894 with previous
itness. While in 1889 the combined receipts at these
6,13 tons, last year—including Fleetwood, Newport, and
ding the same localities—they only amounted to 37,410
action of 33 per cent. On the other hand, the steadiness
consumption is maintained, and the quantity taken last
tons, marks an increase of 3,397 tons, and is 56 per
tal imports. Of the market the record, unfortunately, is
notorious from the almost uninterrupted decline in values,
ed without spirit, but this absence of demand gave place
o a moderate inquiry, which, however, did not always
al business. Sellers showed considerable firmness, but
r carried far enough to really move prices upwards. A
spanish and Algerian alike showed symptoms of weak-
uations when brought to a conclusion generally resulted
ession to the buyer. Full arrivals at this time, and
existing Scotch stocks, did not help the market either for
at fulfilment. During April and May there was a shade
n, but prices were barely steady, and up to the end of
the tendency of all values was towards a lower level.
of some descriptions, Oran more particularly, had now
h a point as to create some surprise that shipments could
lers had, of course, a fair extent of comparatively high-
is unfulfilled, but these were each month getting smaller

as deliveries were written off. The diminishing values had, however,
not yet produced a curtailment of supply—the six months' record
showed an increased importation on 1893 of 2,506 tons. There was,
if possible, intensified dullness and depression with the turn of the
half-year, and during July and August inquiry was at a low ebb, and
remained unaffected by reduced importations. The reports of adverse
balance-sheets and insolvencies in the paper trade did not add to
sellers' cheerfulness, nor encourage them to press sales. With
September came a slight revival of demand, and a fair extent of
business was carried through, but any change in value was still in
buyers' favour. A relapse to indifference and dullness characterised
October and November, but at the beginning of December a distinct
change in sellers' tone became manifest. The feeling of weakness
gave place to one of resistance to further reduction of quotations, and
counter offers from buyers were declined with a firmness that was
unusual. A fair extent of business was carried through before the
close of the year at sellers' limits, and although buyers refused to
follow any advanced prices, the year ended with at least a healthier
market tone than had been experienced in any previous period of the
twelve months.

QUANTITY (corrected) of ESPARTO and other VEGETABLE FIBRE for
the MANUFACTURE of PAPER IMPORTED into the UNITED
KINGDOM during the following years—

From—	1893. Tons.	1892. Tons.	1891. Tons.	1890. Tons.	1889. Tons.
Spain	56,297	59,883	63,202	68,104	67,893
Algeria	67,660	80,236	78,615	78,006	72,702
Tunis	17,835	21,711	16,538	23,930	24,862
Tripoli	43,556	50,987	54,099	46,586	51,612
Morocco	..	75	58	72	56
Other countries	102	73	154	330	131
Total	185,450	212,967	212,666	217,028	217,256

THE GAS SUPPLY OF LONDON AND LEEDS.

LONDON.

THE quality of the gas supplied to the City of London for the week
ending February 2nd, 1895, was bad. According to the tests
of Mr. J. Dibdin, chemist and superintendent gas examiner to the
London County Council, the tests made at the various testing
stations showed 13 deficiencies in illuminating power. The following
figures have been prepared from the report, and show the average com-
position of the gas calculated on the mean test:—

Company.	No. of districts tested.	Illuminating power (in stand. sperm candles).	Sulphur. Grains in 100 cu. ft.	Ammonia. Grains in 100 cu. ft.	Sul- phuretted hydrogen.
		Mean average.	Mean average.	Mean average.	
Gas Light and Coke Co.	14	16'18	10'3	0'23	Nil.
South Metropolitan Gas Co.	6	16'26	11'11	0'85	Nil.
Commercial Gas Co. ..	2	16'1	8'3	0'35	Nil.

The standard gas supplied by these companies should have an
illuminating power of 16 sperm candles, and contain not more than 22
grains of sulphur and 4 grains of ammonia per 100 cub. ft. of gas, on an
average of three days with a pressure of one inch between sunset and
midnight, and six-tenths of an inch between midnight and sunset.

LEEDS.

According to the report of Mr. T. Fairley, F.I.C., gas examiner
for Leeds, the total proportion of sulphur contained in the Leeds gas
during the month ended February 14th, 1895, has averaged 17'48 grains
per 100 cubic feet. The following are the results of tests made at the
Works in grains per 100 cubic feet:—

Place.	Date when Tests were made.		Total Sul- phur.	Ammonia.	Carbonic Acid.	
	Jan. 1895.	Feb. 1895.			Weight.	Volume.
Meadow Lane....	16, 23, 30.	8, 11.	12'01	1'26	48'90	'06
New Wortley ...	17, 21, 29.	5, 12.	22'55	3'33	57'05	'07
York Street	19, 24.	1, 6, 11.	12'87	1'11	48'90	'06
Average at Works	..	..	17'48	2'28	48'90	'06
Average at East Parade	..	..	17'38	2'11	48'90	'06

During the month the average illuminating power of the Leeds Gas
tested at 17, East Parade, the tests being calculated to a uniform con-
sumption of 5 feet per hour, and corrected for variations in temperature
and pressure to a temperature of 60° Fahr. and a barometric pressure
of 30 inches, has been in standard candles (burning 120 grains of
sperm per hour):—Standard argand, 24 hole, 18'1; and standard
batswing, 18'5.

Trade Notes.

THE CENTRAL CYCLONE CO., LTD.—We learn that Mr. W. S. Caine, M.P., has joined the directorate of this company, and has been elected chairman.

RIVAL FRENCH AND GERMAN SUGAR REFINERS.—The French Premier and the Minister of Commerce received recently a deputation of French sugar refiners, who called their attention to the effect which would be produced on the French market by the recent vote in the German Reichstag in favour of paying bounties to German sugar exporters. The Premier stated that the Government had already taken the vote of the Reichstag into consideration, and were studying means for nullifying the prejudicial effect which the payment of bounties in Germany would have on the French market.

THE SALFORD SEWAGE SLUDGE STEAMER.—This steamer arrived at Salford this week, having been launched on the 8th inst. from the yard of Messrs. W. Simons and Co., Renfrew. The great success of the fleet of sludge steamers used for the past four years in conveying out to the deep sea the London sewage sludge has led the Corporation of Salford to adopt similar means for disposing of the daily quantity of 250 to 300 tons intercepted at their sewage works at Mode Wheel; and the enormous accumulations for the past twelve years' working will also be gradually carried, thereby clearing the land ready for more profitable use. The steamer, which has been named the *Salford*, is 170ft. long, 32ft. beam, 13ft. 9in. depth moulded. Her load draught will be about 10ft., and her speed ten knots an hour. She has four sludge tanks, together holding 600 tons, and these being entirely above the light water-line, they will be discharged by opening eight valves over 18in. pipes passing through the bottom of the ship. The loading inlet is over the centre of the four tanks, with regulating sluices to each tank. The vessel is strongly constructed of steel, the hull, boilers and machinery being to Lloyd's 100 A class. The hull is divided into ten water-tight compartments; the engine and boiler rooms are specially protected from rough water; there is a turtle-deck fore-castle, and the bulwarks are close-plated, all these arrangements being made to withstand the rough weather often found in crossing the Mersey bar. The twin screw propellers are driven by triple expansion engines, supplied by two steel boilers carrying 160lb. working pressure.

NITRATE SALES IN CHILE.—According to the law, No. 127, of the 29th November, 1893, there shall be sold by Public Auction, at Santiago, before the Junta de Almoneda, on the 15th May, 1895, and following days, the undermentioned Nitrate Works and Grounds in Tarapacá:—*Nitrate Works*: Victoria, £41,031 14s.; Palacio Industrial, £9,336 16s.; California, £45,014 8s.; La Banda, £3,480; Chiniquiray or Tarapacá y Santa Rosa, £21,721 6s.; San Pedro Dávalos, £3,000; Pena Grande, lote No. 1, £181,235 16s.; Pena Grande, lote No. 2, £185,079 6s.; Santa Adela, £18,503 6s.; Santa Laura de Wendell, £115,290 4s.; Carmen Bajo, £44,039 8s.; Rincon de Benavides, £1,829; San Antonio Viejo, £4,000; Santa Ana £81,792 4s.; Nueva Soledad, £84,520 18s.; Barreñechea y Union, £57,374 8s. *Nitrate Grounds*: Cerro Pitagayac, £1,267; Resbaton y San Roman, £11,050; Terrenos detrás Abra de Quiroga, £4,200; Puntilla detrás de Abra de Quiroga, £25,200; Terrenos entre La Banda y Carolina, £3,600; Nebraska, £100,000. The laws and decree concerning the sale as well as the plans, specifications, &c., can be seen at the Chilean Legation, Members' mansions, Victoria-street, S.W.

MORE ICE CREAM REVELATIONS.—Dr. Harvey Littlejohn, the medical officer of health, has presented to the Sheffield Health Committee the following report: "I beg to report that I have carefully considered the reports of Dr. Harris and Dr. Klein, upon the subject of ice cream, and the conditions under which it is sold. I can fully endorse all that Dr. Harris states in regard to the filthy conditions under which the substance is prepared. Nearly all the ice cream vendors in Sheffield are Italians, who, of dirty habits themselves, make, if possible, their surroundings yet more filthy. The ice cream is prepared in cans frequently kept in the dwelling rooms, and which when not actually employed in manufacturing the substance, are often used for other purposes, such as washing, &c. The ingredients used are also to my own knowledge not always such as are desirable, and in one instance I found that the ice used for cooling purposes was removed from a pond of sewage of the worst description. At present the sanitary authority possesses no powers for dealing effectually with the question, and I quite agree with the suggestion that the vendors of ice cream should be registered, and their premises regularly inspected. In my opinion this could be most easily accomplished by including the trade within the scope of the dairies, cowsheds, and milkshops order, by which the vendor would have to be registered, his premises inspected and passed by the sanitary authority, and by which also the purity of the vessels used in the manufacture and materials would be ensured." The committee resolved to send a copy of the report to the

Local Government Board, with an expression of opinion that it is a necessity for instituting legislation for the registration of the vendors of ice creams, and otherwise for the regulation of the trade.

DECISION OF THE CORDITE APPEAL.—At the House of Lords Thursday, before the Lord Chancellor and Lords Watson, Ashb. Morris, and Shand, the hearing of Mr. Nobel's appeal, in which question whether the Government had infringed Mr. Nobel's patent for the manufacture of smokeless powder, was resumed. Their Lordships, without calling upon counsel for the Government, dismissed the appeal, holding that on the findings of two courts soluble and insoluble cellulose were two distinct substances, and that using the insoluble cellulose in the manufacture of cordite was not an infringement of the patent, where only soluble nitro-cellulose was employed. The judgment was unanimous.

LAMP FATALITY ON A DUTCH MAIL PACKET.—A fire, in which the loss of two lives, occurred quite recently on board the Zeeland Company's mail packet *Prinses Elisabeth*, which was at the time alongside the London, Chatham, and Dover Company's pier at Queenborough, awaiting the arrival of the mail train with passengers for Flushing and the Dutch and German mails. At about half-past seven a cabin boy was in the fore-cabin lighting an oil lamp, which was either upset or exploded. The oil ignited the deck caught fire. The boy threw his coat over the flames, endeavoured to stamp it out, but without success, and the fore-cabin was soon in flames. An alarm was raised, and efforts were made to cope with the fire. Owing to the severe weather, some time elapsed before a water supply could be obtained from the shore standpipes, with one exception, being frozen. Some of the crew made most narrow escapes. Two men and a boy, who were in a compartment underneath the fore-cabin, forced their way out by a hatch through a partition, but the escape of two able seamen, who were sleeping in their berths immediately under the fore-cabin, was completely cut off by the fire, and they could be heard for some time knocking at the sides of the ship for the assistance which the mates were powerless to render. A plentiful supply of water was eventually obtained, and the fire was extinguished about 11 o'clock, at which time the mail packet was completely gutted from the fore-cabin to the officers' quarters, the after part of the ship escaping without damage. The men whose knocking had been heard were found to be S. Geluk and J. Swerrus, of Holland. Both had died from suffocation, the bodies being only slightly burned. A boy belonging to the *Prinses Elisabeth* was rather badly burned about the head, and two able seamen were also injured.

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzol is firm at 1s. 1d. for 90's and 50/90's. Carbolic acid stands still, prices being unaltered, though they are virtually no longer being very little business doing. Solvent naphtha remains at 1s. 2d., and crude at 5d. Creosote is in rather poor demand at 1s. 6d. Anthracene steady. Pitch is quoted 34s. f.o.b. East Coast, and forward 33s.

Sulphate of ammonia is much firmer, the increased demand brought about an advance in prices. Business has been chiefly in the hands of dealers, so that with the prospect of consumers' orders yet to come the outlook is favourable. Quotations are:—Beckton £11. 10s. 6d. outside makes £11. 7s. 6d., Liverpool £11. 7s. 6d., Hull £11. 6d. and Leith £11. 5s. to £11. 6s. 3d. Forward has been at £11. 7s. 6d. Nitrate quiet.

REPORT ON MANURE MATERIAL.

There is a moderate amount of business passing, but until manufacturers see their stocks moving, they will be in no hurry to complete their requirements in material, and until they can see the season is likely to turn out they will probably postpone further purchasing ahead. Prices remain without much alteration. The quotation for 75/80% Florida phosphate rock is 7½d. per ton, cargoes, c. f. and i. to good United Kingdom ports, 1895 shipment, but this price does not induce business. The value of Carolina River rock is about 6½d. per unit, that of Pease River barely 6½d. per unit, and that for 60/65% Algerian scarcely 6d. per unit. Cargoes of River Plate bones still find a very ready market, and the value cannot be put at over £4. 3s. 9d. per ton delivered good United Kingdom ports. Retail sales of

refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4½d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3¼d. nett, f.o.b. Glasgow); chlorate of potash, 5d. less 5%, Liverpool; nitrate of soda, 9s.; sulphate of ammonia, £11. 2s. 6d. to £11. 5s. prompt, f.o.b. Leith; sal-ammoniac, first and second white, £39. and £37. nett, any port, sulphate of copper, £15. 5s. less 5%, Liverpool; paraffin scale, hard 1½d.; and soft, 1¾d. to 2d. per lb.; paraffin wax 120° semi-refined, 2½d.; paraffin spirit (naphtha), 4½d. per gallon; paraffin oil (burning), standard No. 1 grade, 4½d. at works, for Scotch buyers (English sales, 4d. to 4½d. lower); ditto (lubricating) 865° £4. 5s.; 885° £4. 10s. to £5., and 890-895° £5. to £5. 10s. Week's imports of sugar at Greenock were 20,055 bags beet unrefined.

TYNE CHEMICAL REPORT.

TUESDAY.

Chemicals are unaltered, and shipments continue fair. 76/77% caustic is scarce and in demand, at £9. 10s. to £9. 15s.; 70%, £7. 10s. to £8., according to destination. Sulphur scarce at £4. per ton.

Bleaching Powder, soda, £7. 5s. per ton, nett; hard, £7. 10s. per ton, nett; caustic soda, 76/77%, £9. 15s. per ton, nett; do., 70%, £8. per ton, nett; recovered sulphur, 2 cwt. bags, £4. per ton, nett; soda ash, 48%, £3. 15s. per ton, nett; do., 52%, £4. 2s. 6d. per ton, nett; do., 56%, £4. 10s. per ton, nett; alkali, 56%, £2. 15s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. 12s. per ton, nett; do., 52%, £5. 5s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £5. 15s. per ton, nett; do., 1 cwt. kegs, £6. 7s. 6d. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £1. 16s. 6d. per ton, nett, gross weight; do., 2 cwt. bags, £1. 16s. 6d. per ton, nett; chlorate of potash, 5½d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £4. 2s. 6d. per ton, nett; black fine, £7. 10s. per ton, nett; chloride of barium, £7. 10s. per ton, nett; carbonate of alumina, £28. 15s. per ton, nett; aluminate of soda, £33. 15s. per ton, nett; in 5 ton lots, £28. 10s. per ton, nett.

SALT.—South Durham salt firm at 9s. 6d. per ton, f.o.b. Tees.

COALS.—There is rather more work at the pits, and, with the cessation of the severe weather, shipments are being more freely made. Prices: Best Northumbrian steam, 8s. 6d. to 8s. 9d. per ton; second qualities, 7s. 6d. to 7s. 9d. per ton; small steam, 5s. to 5s. 3d. per ton; gas coal steady, 7s. to 7s. 6d. per ton. Coke quiet, 13s. to 13s. 6d. per ton.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—The continued gloom overhanging the country is not without its effect here, coupled with the shortness of stocks and enhanced prices of some commodities, making matters more accentuated. The import of linseed during this week has been only 816 qrs. from Rotterdam, and even with this scarcity linseed oil has fallen about 5s. per ton, and has an export for the week of 1,700 cwt. This time a year ago the imports of seed had reached a total of 75,283 qrs. against the same time this year of 43,009 qrs. Linseed oil closes quiet at 20s. naked, spot or month; 19s. March-April, and 18s. 1½d. May-August; last four months offer at 18s. Boiled and refined from £1. to £2. per ton extra. Cottonseed is firmer, owing, no doubt, to the enhanced price for seed, in consequence of very limited shipments, the price for spot being worth 25s. 9d. naked, and buyers at 16s. for March-April or 16s. 6d. for May-August; casks 17s. 6d. per ton, and ordinary barrels 20s. per ton extra. Export of refined for the week has been 4,360 cwt. Castor oil, first pressure, 2½d. per lb. Cod oil £16. to £18. per ton. Spirits of turpentine 22s. 3d. per cwt. Sod oil, for carriers, etc., £15. to £16. per ton. Boiled drying oil £12. per ton. Soft soap 14s. 6d. per cwt.

CAKES.—Linseed cakes firm and scarce: 95%, pure, £7. 2s. 6d.; oilless, £5. 12s. 6d. to £5. 17s. 6d.; Randani, £6. 10s. to £6. 15s. Cotton cakes show increased firmness: best makers, £3. 10s. to £3. 12s. 6d. per ton; second, £3. 7s. 6d. Rape cakes unchanged.

PAINTS.—The situation is unaltered. Prices are: Venetian red, white of iron, black, blue, green, and yellow ochre paints from £12. per ton. Washable discolouring colours in water-varnish-colours from £20. per ton. White and red lead unchanged. Paint remover 25s. to 30s. per cwt. Imperial black varnish £5. 10s. per ton. Ready-mixed paints from £25. per ton. Ultramarine, dry, from 3d. to 8d. per lb. Bone black from £4. per ton. Oak varnish from 5s. 6d. per gallon. Copal varnish 7s. per gallon. Brunswick black from 4s. per gallon.

New Companies.

Nitrogen Company, Limited.—CAPITAL £2,000., in £1. This company has been formed to enter into an agreement with parties to manufacture nitrogen gas.

Water Softening and Purifying Patents, Limited.—CAPITAL £50,000., in £1. shares. This company has been formed to hire, and deal in water-softening plant. The subscribers' memorandum of association are:—J. Jensen, Forest-side, E. engineer; H. W. Newman, 92, Brooke-road, N., insurance broker; F. E. Balleine, 46, Torrington-square, W.C., clerk; H. G. B. 74, Cufford-road, N.E., clerk; D. P. Kingsford, Lindley East Molesey, gentleman; C. M. H. Crayshaw, Croydon, engineer; H. J. Phillips, 20, Bloomfield-road, N.E., clerk.

Lagunas Syndicate, Limited.—CAPITAL £1,100,000, in £5. each. This company has been formed to acquire grounds, and the *officinas* now being erected thereon, with the effects of the Lagunas Syndicate, Limited, registered in 1889. subscribers to the memorandum of association are:—J. H. G. 87, Wimpole-street, W., barrister; C. Wanklyn, 8, Colville-street, W., gentleman; A. H. Dawborn, 9, Porchester-place, W., clerk; Lee, 212, Friern-road, S.E., gentleman; C. J. Petrie, 19, Calvert-street, W.C., esquire; E. M. Crawley, White House, Long esquire; A. R. Wilkinson, 59, London-road, Ealing, esquire.

Glasgow Portland Cement Company, Limited.—CAPITAL £10,000., in 9,250 preference £1. shares and 750 deferred shares of the same value. This company has been formed to acquire and the patent of A. Patrick, for improved manufacture of Portland cement. The subscribers to the memorandum of association are: Robert Rule, 7, Montgomerie-crescent, Glasgow, manufacturer; Alexander Raeside, Craiglee House, Glasgow, manufacturer; Raeside, 6, Oakley-terrace, Glasgow, manufacturer; Alex. Patrick, 16, Bothwell-street, Glasgow, merchant; Alex. W. 115, St. Vincent-street, Glasgow, solicitor; Wm. Aitken, 115, Vincent-street, Glasgow, solicitor; John Downie, 115, St. Vincent-street, Glasgow, solicitor.

The Patent List.

This list is compiled from Official sources in the *Manual Technical Laboratory*, under the immediate supervision of George E. Davis and Alfred R. Davis, who report profusely upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT

- Improvements in Manufacture of Magnesium Sulphate. M. N. D. 2,943. February 11.
Improved Retort for Chemical Processes. E. L. Pease and Ashman Pease and Co., Ltd. 2,945. February 11.
Process for Electro-deposition of Aluminium and Aluminium Alloys. A. F. B. Gomers. 2,955. February 11.
Obtaining Zinc from Ores and effecting the Electro-deposition of Zinc upon Iron, etc. The Cowper-Coles Galvanizing Syndicate, Ltd. S. O. Cowper-Coles. 2,959. February 11.
Anti-Incrustation Compositions for Steam Boilers. W. Burt J. H. Williams. 3,004. February 11.
Improvements in Sugar Manufacture. W. P. Thompson. 3,049. February 11.
Smoke Preventer. W. A. Lees and F. Farnworth. 3,059. February 11.
Production of Titanium and its Alloys. H. Molau. 3,063. February 11.
Obtaining Gold and Silver from Ores, etc. J. S. MacArthur. February 11.
Producing Concentrated Sulphuric Acid by Electrolysis. L. W. 3,113. February 11.
Method and Apparatus for Obtaining Sulphate of Lead from Galena. C. P. Shrewsbury, F. Marshall, and J. Cooper. 3,127. February 11.
Process and Means for Treatment and Utilization of Sewage. J. P. 3,172. February 11.
Utilising Sewage, Wet or Dry, and Purifying Effluents with Chemical or any other Precipitant. J. Bromlow. 3,201. February 11.
Extracting Gold and Silver from Ores. J. B. Tazewell. 3,202. February 11.
Apparatus for Softening and Purifying Water. H. T. Wright. February 11.
Improvements in Manufacture of Fertilizers and Steel. W. H. and T. Twyman. 3,371. February 11.
Improvements in Composition and Manufacture of Artificial W. Knowles. 3,373. February 11.
Improvements in Steam Traps or Separators. J. Klein. 3,470. February 11.

Gazette Notices.

PARTNERSHIP DISSOLVED.

G. Tress and F. R. Watkins, dyalists and all and colour men Birmingham, under the style of Tress and Watkins.

IMPORTS OF CHEMICAL PRODUCTS

AT
THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

ending February 26th.

Acid—	9 pkgs.	Beresford & Co.
of Lime—	10	F. Boehm
acid—	400 bgs.	Lister & Biggs
acid—	5 pkgs.	F. Stahlschmidt & Co.
acid—	100	Beresford & Co.
acid—	1 pkge.	T. H. Lee
acid—	5	A. & M. Zimmermann
acid—	£35	C. Tennant, Sons & Co.
acid—	50 t.	J. Bamber
acid—	4 cks.	Brit. Anti-fouling Paint Co.
acid—	£7	Bolling & Lowe
acid—	55	Craven & Co.
acid—	512	W. Byford
acid—	730	Bender & Martinez
acid—	1,000	W. Byford
acid—	310	Brit. Asbestos Co.
acid—	30 cks.	Burrell & Co.
acid—	24 pkgs.	J. E. Maeder
acid—	24	"
acid—	12 pkgs.	City Coml. Wf., Ltd.
acid—	5 c.	J. Owen
acid—	136	L. & I. D. Jt. Co.
acid—	33	C. S. Lovell
acid—	12	H. Johnson & Sons
acid—	41	Lavington Brs. & Co.
acid—	65	T. Merry & Son
acid—	22	Stiebel Brs.
acid—	244	L. & I. D. Jt. Co.
acid—	60 tubes	Union Wfs. Co.
acid—	10 cs.	Beresford & Co.
acid—	13	Potter & Clarke
acid—	5	L. & N. W. Rly. Co.
acid—	20	Barron, Harveys & Co.
acid—	24	Stebbing & Co.
acid—	25	City Coml. Wf., Ltd.
acid—	25 pkgs.	T. Palmer
acid—	46	O. Scholzig
acid—	49 pkgs.	Leach & Co.
acid—	32	T. H. Lee
acid—	3	A. & M. Zimmermann
acid—	10	L. & I. D. Jt. Co.
acid—	15	Fellows, Morton, & Co.
acid—	15	T. H. Lee
acid—	16	J. Forsey
acid—	5 pkgs.	Ross & Deering
acid—	16	W. C. Bacon & Co.
acid—	5	"
acid—	1	J. L. Lyon
acid—	30	A. P. Morris
acid—	30	B. & F. Wf. Co.
acid—	6	"
acid—	6	F. & L. Sitzler
acid—	16 cks.	Kirkpatrick & Co.
acid—	32 pkgs.	W. M. Smith & Sons
acid—	39	F. Huth & Co.
acid—	45 bgs.	Hammond & Co.
acid—	15	Sperling & Williams
acid—	8	Kuhner, Henderson & Co.
acid—	48 pkgs.	L. & I. D. Jt. Co.
acid—	205	L. J. Levinstein & Sons
acid—	105	W. Burton & Sons

Germany, 5	20 kgs.	T. H. Lee
Denmark, 100		R. J. Fullwood & Co.
U. States, 100		Skilbeck Brs.
France, 80		B. & F. Wf. Co.
" 12		Summerbays & Co.
Denmark, 2		Tegner, Price & Co.
Fustic		
Jamaica, 16 L.		Park, Macfadyen & Co.
" 4		S. Dobree & Co.
Gambier		
E. Indies, 955 pkgs.		Beresford & Co.
" 484		E. Boustead & Co.
Indigo		
E. Indies, 22 chts.		W. France & Co., Ltd.
" 242		L. & I. D. Jt. Co.
" 170		Langstaff & Co.
" 83		Darling Brs.
" 35		T. Barlow & Brs.
" 36		Parsons & Keith
" 35		Dipnall & Co.
" 59		Park, Macfadyen & Co.
" 112		Stansbury & Co.
" 12		F. W. Heilgers & Co.
" 15		Seton, Laing & Co.
" 66		Kenyon & Sons
" 12		E. Bower & Co.
" 5		Thomasset & Co.
" 5		M. Erdmann & Co.
" 4		F. Huth & Co.
" 149		2 bxs. Elkau & Co.
" 183		H. J. Perlach & Co.
" 11 pkgs.		Phillips & Graves
" 52		Williams, Torrey & Co.
" 41		Herrmann & Co.
" 30		Ralli Brs.
" 2		H. Lambert
" 17		F. Stahlschmidt & Co.
" 24		Marshall & French
" 283		L. & I. Dk. Co.
" 12		Patry & Pasteur
Greytown, 18		"
Germany, 3		E. Theolore & Co.
Logwood		
Jamaica, 11 L.		S. Dobree & Co.
" 75		Benekendorff & Co.
" 37		Park, Macfadyen & Co.
Safflower		
Spain, 1 pkge.		Major & Field
Shumac		
Italy, 300 pkgs.		Beresford & Co.
" 100		J. Knill & Co.
Tanner's Bark		
Natal, 50 t.		A. & W. Nesbitt
" 53		Dyster, Nalder & Co.
Yalonia		
Greece, 1 t		Beresford & Co.
" 1		J. Graves
French Chalk—		
Italy, £45		W. Harrison & Co.
Glucose—		
Germany, 100 pkgs.	100 c.	Ohlenschlager Brs.
Holland, 100	140 c.	J. Barber & Co.
U. States, 100	566	Ohlenschlager Brs.
" 172	419	Fuerst Brs.
" 402	402	R. G. Hall & Co.
" 252	1,000	L. Norman & Co., Ltd.
" 250	260	Pickford & Co.
" 1,850	2,325	L. Sutro & Co.
" 500	500	Barrett, Tagant & Co.
Guano—		
Sweden, 50 t.		Anglo-Swedish Co., Ltd.
Iron Oxide—		
Persia, 61 pkgs.		L. & I. D. Jt. Co.
Manganese—		
Germany, 2 t.		C. Hof & Co.
Manganese Ore—		
N. Zealand, 3 t.		Fisher, Renwick & Co.
Methyl Alcohol—		
Germany, 24 cks.		Lister & Biggs
Belgium, 55 dms.		Stein Brs.

Mica—		
E. Indies, £100		L. & I. D. Jt. Co.
" 53		W. M. Smith & Sons
" 25		Hale & Son
Molasses—		
U. States, 1,000 cks.	5,553 c.	J. Newcomb
Ochre—		
Germany, 3 cs.	1 ck.	Phillipps & Graves
France, 18 cks.		J. L. Lyon & Co.
" 1		Stobbs, Wilson, & Co.
Ozokerit—		
Germany, 76 pkgs.		Carter, Paterson, & Co.
Paraffin Wax—		
U. States, 1,758 pkgs.		Anglo-American Oil Co.
" 256		Mordaunt Brs.
" 10 cs.		Welch, Perrin, & Co.
Phosphate Rock—		
Belgium, 40 t.		B. Jacob & Sons
" 240		West & Penrose
France, 115		A. Hunter & Co.
Belgium, 220		Lawes Chemical Manure Co.
Phosphorus—		
N. Russia, 3 pkgs.		H. W. Pealody & Co.
Plumbago—		
Holland, 37 cks.		B. Gallaway
Germany, 29		J. Thredder, Sen. & Co.
" 12		Acton & Borman
" 25 cs.		J. Sinclair & Son
Potassium Bicarbonate—		
Holland, 75 pkgs.		Phillipps & Graves
" 50 cks.		A. & M. Zimmermann
Potassium Carbonate—		
France, 4 pkgs.		J. A. Reid
Potassium Cyanide—		
Germany, 10 cs.	20 pkgs.	Page Son, & Co.
Potassium Oxymuriate—		
Sweden, 50 pkgs.		G. Poor & Co.
Pumice Stone—		
Italy, 4 t.		H. B. Alder & Co.
" 10		Stobbs, Wilson, & Co.
Quicksilver—		
Italy, 100 btl.		L. & I. D. Jt. Co.
Spain, 5,000 flks.		N. M. Rothschild & Sons
N. Russia, 490 btl.		L. & I. D. Jt. Co.
Saltpetre—		
Germany, 70 cks.		P. Hecker & Co.
E. Indies, 619 bgs.		Lucas & Spencer's Wf., Ltd.
Germany, 100		P. Hecker & Co.
E. Indies, 619		C. Wimple & Co.
Starch—		
Belgium, 120 pkgs.		T. H. Lee
" 40		H. Johnson & Sons
France, 40		E. & T. Pink
Belgium, 140		F. Claydon & Co.
" 260		Horne & Co.
Germany, 120		J. Hall, jun., & Co.
Holland, 1,406		Little & Johnston
Germany, 2,180		Horne & Co.
Belgium, 188		T. H. Lee
Stearine—		
France, 100 bgs.		H. Hill & Sons
" 100		Beresford & Co.
U. States, 2 cks.		J. Goddard & Co.
France, 100 bgs.		Walbaum & Tosetti
Sulphur—		
Italy, 18 t.		Co-op. Lightgr. Association Ltd.
" 5		J. T. Morton
" 15		Hyslop & Symonds
" 5		F. Smith
" 18		F. C. Devon & Co.
" 200		W. C. Bacon & Co.
" 5		T. T. Creed
" 5		J. Puddy & Co.
" 100		A. Hunter & Co.
" 10		Typeke & King
" 50		Laughland, Mackay, & Co.
" 10		Parbury & Co.
Sulphur Chloride—		
Holland, 17 pkgs.		J. Owen

Talc—		
France, £40		G. G. Blackwell, Sons, & Co.
Tartaric Acid—		
Holland, 20 cks.		Kirkpatrick & Co.
Turpentine—		
France, 50 cks.		T. Trapp & Sons
N. Russia, 50 brls.		F. & S. Chiesman & Co.
Ultramarine—		
Belgium, 4 cs.		Leach & Co.
Germany, 46 pkgs.		Phillipps & Graves
Holland, 13		"
Yarnish—		
Belgium, 1 pkge.		Leach & Co.
White Lead—		
Holland, 37 cks.		Randall Bros.
France, 18		J. L. Lyon & Co.
Belgium, 22 brls.		T. H. Lee
Holland, 4		A. Zumbek & Co.
Wood Pulp—		
Holland, 340 pkgs.		E. J. & W. Goldsmith
Germany, 618		"
Belgium, 54		F. Claydon & Co.
Germany, 100 btl.		Andersen, Becker, & Co.
Zinc Oxide—		
Holland, 77 brls.		M. Ashby, Ltd.
Zinc Sulphate—		
Germany, 16 pkgs.		F. Smith

LIVERPOOL.

Week ending February 14th.

Antimony Ore—		
Antofagasta, 150 bgs		
Bone Ash—		
Campana, 269 bgs.		
Bone Meal—		
Valparaiso, 120 bgs.		Duncan, Fox & Co.
Boracic Acid—		
Leghorn, 47 cks.		
Borate of Lime—		
Iquique, 1,143 bgs.	606 sks.	
Antofagasta, 1,249		
Borax—		
Mollendo, 1,339 sks.		Brownells & Co.
Camphor—		
Hamburg, 1 ck.		
Castor Oil—		
Marseilles, 493 bls.		
Chemicals (otherwise undes.)—		
Hamburg, 2 cs.		
Philadelphia, 54 cks.		W. Blythe & Co.
Cod Oil—		
Hamburg, 5 brls.		
Colours—		
Rotterdam, 20 cks.	8 brls.	
Hamburg, 4 cs.		
Copperas—		
Bremen, 15 cks.		
Cottonseed Oil—		
N. Orleans, 1,500 brls.		
New York, 5		M. Bell
Cream of Tartar—		
Marseilles, 15 cks.	5 brls.	
Barcelona, 10 hds.		Sachse & Klemm
Rotterdam, 2 cks.		
Dried Blood—		
Campana, 125 bgs.		
Dyestuffs—		
Argols		
Patras, 6 cs.		C. G. Papayanni & Co.
Cochineal		
Gd. Canary, 10 bgs.		Bursell & Co.
Cutch		
Rangoon, 930 bxs.		

Extracts		
Nantes,	535 brls.	Bark Extract Co.
Marseilles,	180	
New York,	95	50 bxs.
Fiume,	208	De Clermont & Donner
Bordeaux,		50 cks.
Trieste,	600	Oak Extract Co.
Baltimore,	10	
Philadelphia,	100 bxs.	
Fustic		
Colon,	170 ps.	Widow Duranty & Son
Baltimore,	3,567	
Tampico,	6,117 sticks	
Patras,	10 t.	
Saffron		
Valencia,	1 cs.	
Sumac		
Bordeaux,	225 bls.	
Palermo,	2,130 bgs.	
Valonia		
Syria,	1,071 bgs.	
Patras,	474	S. Levy & Co.
"	267	A. M. Cathofos
"	100	A. Gibbs, Sons & Co.
"	214	Papayanni & Jeremias
"	10	Barff & Co.
Farina		
Fiume,	60 bgs.	C. J. Van der Veen & Bros.
Trieste,	150	
100		
Fluorspar		
Hamburg,	55 sks.	
Glucose		
New York,	200 brls.	
Newport News,	200	
Philadelphia,	108	
Manganese Chloride		
Hamburg,	1 ck.	
Manganese Ore		
Carrizal,	41y.	
Seville,	100 t.	
Mineral White		
Trieste,	190 bgs.	
Fiume,	100	
Ochre		
Rouen,	29 cks.	R. J. Francis & Co.
Marseilles,	8 brls.	
Cartagena,	13	
Oxalic Acid		
Rotterdam,	8 cks.	
Paint		
Marseilles,	16 cs. 5 brls.	Collett
Boston,	8	Bahr, Behrend, & Ross
Paraffin Seale		
Baltimore,	300 brls.	
New York,	806	Thompson & Bedford
Paraffin Wax		
Baltimore,	100 brls.	
Phosphate Rock		
Fernandina,	1,410 t.	
Phosphoric Acid		
Bremen,	12 cks.	
Pitch		
Marseilles,	309 brls.	
Potashes		
Portland,	10 brls.	Allan, Bros. & Co.
Bremen,	12 cks.	
Pumice Stone		
Laghorn,	200 bgs.	
Messina,	12 brls.	100 cs.
Rosin		
New York,	400 brls.	
Saltpetre		
Hamburg,	4 cks.	
Soap		
Marseilles,	1 cs.	Cunard & B. Co.
"	88	120 bgs.
Boston,	1	Barclay & Sons
"	1	W. Edwards & Son
Laghorn,	1,000 bgs.	Weaver & Sterry
New York,	50	R. Crooks & Co.
Bari,	227 1/2	
Newport News,	170 bls.	
Soapstone		
Bordeaux,	200 bgs.	G. G. Blackwell, Sons, & Co.
Genoa,	110	C. Huntris
"	200	
Starch		
Rotterdam,	80 cs.	

Newport News,	200 bgs.	
Hamburg,	134	
Sulphur		
Girgenti,	250 t.	
Catania,	140 bgs.	
Tallow		
Campana,	270 cks.	
Tar		
Boston,	50 brls.	A. Walford & Son
Tartar		
Bordeaux,	11 cks.	
Treacle		
New York,	40 brls.	
Bordeaux,	4 cs.	
Philadelphia,	1 brl.	Barker & Dobson
Varnish		
Boston,	61 bxs.	W. H. Staynes & Smith
Wood Pulp		
Rotterdam,	96 bls.	
Zinc Ashes		
Marseilles,	11 brls.	

MANCHESTER.

Week ending February 16th.

Antimony		
Treport,	2 cks.	Arnati & Harrison
Asbestos		
Rotterdam,	5 cts.	
Barium Chloride		
Rotterdam,	16 cks.	
Colours		
Treport,	22 cks. 15 cs.	Arnati & Harrison
Rotterdam,	15	123 brls.
Cyanide		
Antwerp,	12 cks.	
Dextrine		
Stettin,	50 bgs.	
Dyestuffs		
Alizarine		
Rotterdam,	27 cks. 1 cs.	
Extract		
Treport,	19 cks.	Arnati & Harrison
Litharge		
Rotterdam,	17 cks.	
Nitrate		
Rotterdam,	24 cks.	
Sodium Acetate		
Treport,	28 cks.	Arnati & Harrison
Starch		
Rotterdam,	20 cs.	
Antwerp,	326	
Tartar		
Bordeaux,	2 cks.	J. & P. Hutchinson
Wood Pulp		
Gothenburg,	1,968 bls.	
Zinc Oxide		
Antwerp,	110 brls.	
Zinc Sulphate		
Rotterdam,	3 brls.	

HULL.

Week ending February 16th.

Acid		
Hamburg,	5 cks.	Wilson, Sons, & Co., Ltd.
Bari,	8	"
Alkali		
Rotterdam,	8 dms.	W. & C. L. Ringrose
Asbestos		
Rotterdam,	3 pks.	W. & C. L. Ringrose
Barytes		
Bremen,	41 cks. 100 bgs.	
Antwerp,	55	Bailey & Leetham
Camphor		
Hamburg,	3 cs.	
Candles		
Rotterdam,	8 bxs.	Wilson, Sons, & Co., Ltd.
Chemicals (otherwise undesignated)		
Stettin,	10 cks.	Wilson, Sons, & Co., Ltd.
Dunkirk,	50	"

Cod Oil		
Aalesund,	120 brls.	Wilson, Sons, & Co., Ltd.
Bergen,	117 pks.	"
Colours		
Rotterdam,	1 ck.	Hutchinson & Son
Antwerp,	11 pks.	Wilson, Sons, & Co., Ltd.
Stettin,	24 cks.	
Bremen,	4	
Rotterdam,	135 pks. 3 cs.	W. & C. L. Ringrose
Cryolite		
Copenhagen,	2 cks.	Wilson, Sons, & Co., Ltd.
Dextrine		
Stettin,	12 bgs.	Wilson, Sons, & Co., Ltd.
Dyestuffs		
Alizarine		
Rotterdam,	19 pks. 5 cks.	W. & C. L. Ringrose
Indigo		
Amsterdam,	2 cts.	W. & C. L. Ringrose
Madder		
Rotterdam,	3 cks.	Hutchinson & Son
Sumac		
Palermo,	967 bgs.	Wilson, Sons, & Co., Ltd.
"	600	
Farina		
Harlingen,	540 bgs.	
Stettin,	500	
Glucose		
Rotterdam,	100 bgs.	Hutchinson & Son
New York,	25 brls.	Wilson, Sons, & Co., Ltd.
"	100	
Lime		
New York,	2,805 bgs.	Wilson, Sons, & Co., Ltd.
"	80	
Paint		
Bergen,	2 cs.	Brown, Atkinson, & Co.
Boston,	64	Wilson, Sons, & Co., Ltd.
New York,	25	"
Paraffin Wax		
New York,	110 brls.	Wilson, Sons, & Co., Ltd.
Phosphate		
Antwerp,	100 t.	Wilson, Sons, & Co., Ltd.
Pumice Stone		
Messina,	83 bgs. 25 cs.	Wilson, Sons, & Co., Ltd.
Quicksilver		
Hamburg,	3 jars	Wilson, Sons, & Co., Ltd.
Saltpetre		
Hamburg,	52 pks. 1 ck.	Wilson, Sons, & Co., Ltd.
Antwerp,	135 bgs.	"
Soap		
Bari,	151 cs.	Wilson, Sons, & Co., Ltd.
Soda		
Antwerp,	14 cks.	W. & C. L. Ringrose
Sodium Nitrate		
Hamburg,	100 kgs.	Wilson, Sons, & Co., Ltd.
Starch		
Bremen,	1,494 cs.	Veltmann & Co.
Rotterdam,	80 cts. 30 cs.	Hutchinson & Son
Sulphur		
Catania,	166 bgs.	Wilson, Sons, & Co., Ltd.
"	500	
Treacle		
Boston,	757 brls.	Wilson, Sons, & Co., Ltd.
New York,	500	"
Ultramarine		
Hamburg,	30 cks.	Sissons Bros. Hutchinson & Son
Rotterdam,	1 cs.	
Bremen,	12 cks.	
Varnish		
Hamburg,	1 cs.	Wilson, Sons, & Co., Ltd.
Waste Salt		
Hamburg,	200 bgs.	Wilson, Sons, & Co., Ltd.
"	200	"

White Lead		
Rotterdam,	20 cks.	Hutchinson & Son
Antwerp,	54	Bailey & Leetham

GLASGOW.

Week ending February 21st.

Albumen		
Hamburg,	8 cks. 3 cs.	
Aniline		
Rotterdam,	3 cs. 4 cks.	J. R. & Co.
Aniline Colours		
Hamburg,	1 cs.	
Aniline Oil		
Rotterdam,	1 brl.	J. R. & Co.
Aniline Salt		
Rotterdam,	20 brls.	J. R. & Co.
Arachide Oil		
Rotterdam,	2 cks.	J. R. & Co.
Barium Nitrate		
Antwerp,	14 cks.	
Barium Sulphate		
Antwerp,	100 bgs.	
Barytes		
Rotterdam,	84 bgs.	J. R. & Co.
Carbonic Acid		
Rotterdam,	15 tubes	J. R. & Co.
Castor Oil		
Marseilles,	269 brls. 13 cs.	
Antwerp,	57 cks.	
Chemicals (otherwise undesignated)		
Hamburg,	5 cs.	
Cottonseed Oil		
Rotterdam,	10 brls.	J. R. & Co.
Cream of Tartar		
Tarragona,	5 cks.	
Dyestuffs		
Valonia		
Marseilles,	260 brls.	
Farina		
Hamburg,	200 bgs.	
Glucose		
New York,	350 brls.	
Molasses		
Boston,	1 brl.	
Nitrate		
Antwerp,	14 cks.	
Nitrite		
Rotterdam,	4 cks.	J. R. & Co.
Ochre		
Marseilles,	38 brls.	
Painters' Colours		
Antwerp,	1 cs.	
Amsterdam,	1	
Rotterdam,	4 pks.	
Pitch		
Marseilles,	55 brls.	
Potassium Sulphate		
Rotterdam,	4 cks.	J. R. & Co.
Pyrites		
Huelva,	1,594 t.	Thames
Rosin		
New York,	250 brls.	Rowley & Co.
"	2,101	
Soap		
Marseilles,	1 cs.	
Boston,	1 brl.	
Sodium Acetate		
Antwerp,	18 cks.	
Starch		
Antwerp,	9 bgs.	
New York,	500 bgs.	
Stearine		
Amsterdam,	65 bgs.	
Sulphur		
Girgenti,	22,000 c.	Thames
Tallow		
New York,	50 brls.	
Tin Salts		
Rotterdam,	2 cks.	J. R. & Co.
Ultramarine		
Rotterdam,	4 cks.	J. R. & Co.

ulp—	120 bls.	
im,	1,900	
ide—		
h,	25 cks.	
hite—		
am,	100 cks.	J. Rankine & Son
TYNE.		
ending February 16th.		
c Acid Gas—		
am,	90 tubes.	Tyne S. S. Co.
—	19 brls.	

Starch—		
Rotterdam,	138 cs.	Tyne S. S. Co.
Ultramarine—		
Rotterdam,	1 cs.	Tyne S. S. Co.
GOOLE.		
Week ending February 13th.		
Carbolic Acid—		
Rotterdam,	60 pkgs.	
Colours—		
Hamburg,	4 cks.	
Dyestuffs—		
Alizarine		
Rotterdam,	15 cks.	55 pkgs.
Extracts		
Hamburg,	20 cks.	

Madder		
Rotterdam,	2 cks.	
Dyestuffs (otherwise undescribed)		
Boulogne,	45 cks.	6 cs. 2 pkgs.
Rotterdam,		245
Farina—		
Hamburg,	100 bgs.	
Potash—		
Dunkirk,	50 dms.	5 cks.
Saltpetre—		
Rotterdam,	68 bgs.	
Hamburg,	40 kgs.	
Sodium Silicate—		
Rotterdam,	4 cks.	
Starch—		
Rotterdam,	14 cs.	
Varnish—		
Boulogne,	10 cks.	

GRIMSBY.		
Week ending February 16th.		
Aniline Dyes—		
Hamburg,	8 cks.	46 pkgs.
Antwerp,		44
Caoutchouc—		
Hamburg,	10 cs.	
Rotterdam,		1
Chemicals (otherwise undescribed)		
Rotterdam,	8 cks.	
Hamburg,	5	4 cs. 35 pkgs.
Colours—		
Antwerp,	14 cks.	10 cs.
Plumbago—		
Rotterdam,	3 cks.	
Starch—		
Antwerp,	8 cs.	

EXPORTS OF CHEMICAL PRODUCTS
OF
THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.		
ending February 20th.		
own,	2 t. 1 c.	£24
and Disinfectants—		
h,	4 pkgs.	£13
h,	3 t. 16 c.	£143
h,	1 t.	£5
ium Carbonate—		
h,	14 pkgs.	£44
h,	25 cs.	42
ium Chloride—		
h,	5 cks.	£21
h,	2 t. 16 c.	54
h,	6	10
h,	1	40
ium Nitrate—		
h,	7 cks.	£43
ium Sulphate—		
h,	13 t.	£136
h,	50	550
h,	353 16 c.	4,115
h,	2 t.	£31
h,	3	45
ite of Lime—		
h,	3 t. 6 c.	£62
Acid—		
h,	5 t. 2 c.	£122
h,	3	7
h,	7 cks.	10
h,	5 c.	£9
h,	2 t.	44
h,	5 cks.	37
h,	40 kgs.	43
Soda—		
h,	1 t. 10 c.	£50
h,	2 14	57
h,	11 4	111
h,	2 14	9
h,	2 17	51
als (otherwise undes.)—		
h,	9 c.	£31
h,	1 t. 3	36
h,	1 cs.	1 ck. 33
h,	13	16
h,	25 kgs.	12
h,	4	13
h,	17	27
h,	3	130
h,	9 12	77
of Lime—		
h,	20 dms.	£15
acid—		
h,	1 ck.	£35
h,	2 c.	15
h,	2	13
h,	5 kgs.	30
h,	1	7
oducts—		
rine		
h,	50 kgs.	£157
ne Oil		
h,	5 dms.	£150
ne Dyes		
h,	1 cs.	£18

Melbourne,	1	22
Calcutta,	1	37
New York,	53 cks.	280
Benzol		
Rotterdam,	40 puns.	£254
Terneuzen,	2 cks.	15
Carbolic Acid		
Melbourne,	50 dms.	£45
Lyttelton,	100 6 cks.	44
New York,	11	70
Napier,	50	44
Dusseldorf,	80	249
Coal Tar Dyes		
Hamburg,	3 cks.	£100
Creosote		
Huelva,	2,600 brls.	£1,138
Pitch		
Mauritius,	50 kgs.	£20
Gijon,	695 t.	904
Huelva,	364	646
Boston,	2,030 bgs.	348
Tar		
Melbourne,	150 dms.	£26
Dunedin,	10 brls.	12
Sydney,	150	30
Copper Sulphate—		
Amapala,	12 c.	£11
Sydney,	5 t.	74
Cream of Tartar—		
Melbourne,	3 t. 10 c.	£254
Auckland,	1	74
Sydney,	5 pkgs.	4 10 21 kgs 389
Disinfectants—		
Yokohama,	2 t. 13 c.	£63
Adelaide,	4 cs.	12
Wellington,	3	5 pkgs. 32
Pt. Elizabeth,		8 16
Hamburg,	183 cks.	27 950
Sydney,	10 dms.	48 9 171
Cape Town,	1	191 137
Guano—		
Ghent,	20 t.	£109
Hypophosphite of Lime—		
Philadelphia,	1 t. 10 c.	£562
Manure—		
Jersey,	27 t. 3 c.	£300
Santander,	5 3	35
S. Lucia,	225	228
Demerara,	100	1,025
Cullera,	366	955
Madeira,	10	96
Canaries,		14
Bahia,	2 5	18
Gothenburg,	78 16	680
Cape Town,	24 16	129
Lisbon,	3	25
Oxalic Acid—		
Lisbon,	1 t. 1 c.	£36
Phosphate Powder—		
S. Lucia,	50 t.	£119
Phosphorus—		
Blenheim,	5 cs.	£45
Dunedin,	48	487
Potassium Bicarbonate—		
Philadelphia,	2 t. 4 c.	£56
New York,		16
Potassium Bichromate—		
Calcutta,	2 t. 3 c.	£97
Potassium Chlorate—		
New York,	5 t. 8 c.	£250
Auckland,	3	7
Potassium Cyanide—		
Delagoa Bay,	1 t.	£186

Potassium Prussiate—		
Genoa,	6 cks.	£158
Potassium Sulphate—		
Cullera,	10 t. 4 c.	£70
Saltpetre—		
New York,	6 t. 17 c.	£164
Wellington,		24
Santos,	18	23
Dunedin,	1	24
Auckland,	10	12
Wellington,	8	12
Sydney,	5	117
Bahia,	16 2	395
Libau,	2 13	70
Rio de Janeiro,	3 11	87
Corunna,	2	46
Brisbane,	10	12
Sheep Dip—		
B. Ayres,	750 cs.	£1,825
Jamaica,	5 c.	£10
Natal,	2 t. 12	125
Punta Arenas,	250 cs.	565
Soda—		
Brisbane,	1 t.	£7
Sodium Bicarbonate—		
Singapore,	3 c.	£6
Sodium Sulphate—		
New York,	2 t. 4 c.	£13
Sulphur—		
Lisbon,	250 brls.	£174
Sydney,	1 t.	8
Sulphuric Acid—		
Singapore,	1 t 5 c.	£13
Natal,	20 cs.	16
Tartaric Acid—		
Napier,	3 c.	£13
Adelaide,		10 kgs. 46
Auckland,	5	23
Bombay,	6 cs.	31
Sydney,	2 t. 18 3	295

LIVERPOOL.
Week ending February 20th.

Acetic Acid—		
Pernambuco,	3 c. 2 q.	£5
Alum—		
Portland, O.,	50 t. 12 c.	3 q. £225
Brisbane,	1	5
Galatz,	3 1 2	15
Mersyne,	1 8 1	10
Havana,	4 3 2	19
Aluminous Cake—		
Portland, M.,	10 t. 2 c. 1 q.	£39
Calcutta,	12 5 2	37
Ammonium Carbonate—		
Lisbon,	12 c.	£20
Trieste,	8	14
Bordeaux,	1 t.	35
Marseilles,	5	8
Barcelona,	1	1 q. 34
Ammonium Chloride—		
Genoa,	3 t.	£102
Trieste,		35
Yokohama,	1	24
Hiogo,	2	49
Tampico,	6 c.	16
Bilbao,	1	40
Santander,	10	18
Ammonium Sulphate—		
Valencia,	204 t. 11 c.	£2,356

Bordeaux,	5	1	3 q.	56
Genoa,	81	1		930
Las Palmas,	35			400
New York,	126	4	1	1,538
Philadelphia,	75	4	1	883
Malaga,	5	2		60
Newport News,	100	7	1	1,239
Barcelona,	20	14	1	235
Marseilles,	25	8		293
Arsenic—				
Constantinople,	2 t.			£30
Asbestos—				
Port Said,	4 cks.	1 cs.		
Bleaching Powder—				
Larnaca,	249 cks.			
Passages,	15			
Philadelphia,	86			
San Francisco,		108 brls.		
San Sebastian,	30			
Bombay,	40 kgs.	7		
Boston,	310			
B. Ayres,		15		
Cape Town,			40 bxs.	
Genoa,	98			
Ghent,	65			
Lisbon,	12			
Newport News,	146			
New York,	19		10	
Rouen,	54			
Boracic Acid—				
Naples,		12 c. 2 q.		£19
Borax—				
Christiania,	11 c. 1 q.			£11
Bombay,	9	1		9
Natal,	5	1		5
Rotterdam,	1 t. 17			40
Antwerp,	10 8			209
Ghent,	1 2			22
Ferrol,	6			6
Calcium Chloride—				
New York,	5 t. 2 c.			£12
Caoutchouc—				
Santos,	12 cs.			
Carbolic Acid—				
Alexandria,	8 c. 2 q.			£6
Genoa,	1 t. 9	3		82
Hiogo,	18	2		42
Shanghai,	6			14
Algiers,	7	3		18
Hamburg,	6 19			347
Caustic Potash—				
Boston,	8 t. 18 c.			£221
Newport News,	1 10			44
Caustic Soda—				
Larnaca,	200 dms. 27 brls.	4 bxs.		
Oporto,	10			
Pernambuco,	50			
Porto Alegre,	25			
Portland,	108			
Riga,	56			
Rio de Janeiro,	42			
Samarang,	290			
Santa Catherina,			15	
Shanghai,	18			
Sydney,	20			
Algoa Bay,	8			
Amsterdam,	192			
Baltimore,	190			
Bombay,	47			
Boston,	300			
B. Ayres,	50			
Calcutta,	29			

Oxalic Acid — Boston, 23 t. 4702 Paint — New York, 6 cks. Quittab, 100 kgs. Rio de Janeiro, 14 5 6 dms. Rotterdam, 5 St. Michael's, 14 Algiers, 2 Baltimore, 1 Benguela, 1 Bombay, 45 B. Ayres, 2 Cadix, 10 Calbarien, 2 Calcutta, 5 165 Cape Town, 30 Coloa, 1 Colombo, 6 Gd. Canary, 4 Hamburg, 2 Havana, 7 pks. Honolulu, 4 Lagos, 80 La Libertad, 15 cs Las Palmas, 175 Lisbon, 10 brls. 14 M. Video, 6 Mossamedes, 100 Tripoli, 3 10 Vera Cruz, 3 Cienfuegos, 7	Rio de Janeiro , 3 San Francisco, 236 Savannah, 520 Sierra Leone, 300 Sydney, 80 Antwerp, 25 Benin, 16 Boston, 200 B. Ayres, 50 Calcutta, 478 Cameroons, 25 Cape Coast, 25 Christiania, 88 13 c. E. London, 17 17 Lagos, 215 M. Video, 13 Newcastle, 175 Newport News, 350 Wilmington, 550 Shanghai, 15	Calcutta , 250 kgs. Corfu, 300 Genoa, 300 Hamburg, 300 Lisbon, 4 M. Video, 17 Montreal, 17 New York, 1,900 180 Trebizonde, 30 Bombay, 30
Soda Crystals — Philadelphia, 280 brls. Sourabaya, 150 kgs. Boston, 140 140 d. Calcutta, 20 33 M. Video, 54 New York, 280	Salt Cake — New York, 155 t. 3 c. 2 q. 471 Gijon, 28 8 2 50 Philadelphia, 391 1 567 Leghorn, 50 75	Soda Acetate — Naples, 3 cks. Sodium Bicarbonate — Hamburg, 58 30 pgs. Sodium Bicarbonate — Odessa, 100 kgs. Rio de Janeiro, 80 Rotterdam, 10 St. Stephens, 800 Singapore, 80 8 cks. Amsterdam, 100 Baltimore, 100 75 Batavia, 100 10 Bombay, 200 Bordeaux, 80 Boston, 2 B. Ayres, 43 Calcutta, 1,600 6 Christiania, 65 2 Galatz, 100 30 Genoa, 37 Kingston, 20 N. Orleans, 440 Newport News, 180 Valencia, 18 Venice, 190 Kurrachee, 100
Salt Dip — San Francisco, 3 t. 7 c. 460 B. Ayres, 40 7 1,030	Soap — Larnaca, 11 bxs. 3 cks. New York, 1,720 25 cs. Opobo, 1,550 Para, 40 1 Pt. Elizabeth, 550 Portland, 771 Pt. Natal, 431 Rangoon, 250 St. Lucia, 163 St. Thomas, 500 Napedli, 200 Shanghai, 1,733 Alexandria, 50 Akassa, 53 Algoa Bay, 1,148 Amsterdam, 20 Antwerp, 5 780 Baltimore, 1 2 Bombay, 1 25 17 Bonny, 350 Bordeaux, 10 150 bds. Calcutta, 10 250 Cape Lahon, 50 Cape Town, 250 Christiania, 15 Curacao, 50 E. London, 275 Elmina, 100 Gibraltar, 200 Gothenburg, 155 Gd. Bassa, 139 Havre, 135 Honolulu, 50 Johannesburg, 70 Kingston, 1,000 Lagos, 50 Las Palmas, 280 Malta, 50 Manoa, 250 Teneriffe, 210 Victoria, 20 Victoria, B. C., 36 Warri, 250 Salaverry, 300 Callao, 1 Sierra Leone, 60 2 Melilla, 80 Morant Bay, 25 Mussel Bay, 170 N. Orleans, 400	Sodium Chlorate — Rotterdam, 7 kgs. Sodium Hyposulphite — San Francisco, 350 kgs. Sodium Oxide — Larnaca, 10 cks. Sodium Prussiate — Naples, 8 cks. Sodium Silicate — Stax, 5 brls. Spent Oxide — Antwerp, 283 t. Sulphur — Trinidad, 19 c. 34 Pernambuco, 5 t. 14 1 Macao, 11 3 Philadelphia, 180 Portland, O., 49 19 Boston, 75 Superphosphate — Valencia, 8 t. 3 c. Tin Crystals — Batavia, 5 c. Treacle and Molasses — Rotterdam, 25 cks. 25 brls. Accra, 9 cs. Amsterdam, 10 25 Christiania, 50 445 t. Christiansand, 10 Ghent, 20 Gothenburg, 70 50 Gd. Canary, 1 Hamburg, 10 tcs. 5 Terneuzen, 5 27 St. Thome, 114
Tar — London, 100 New York, 100 San Francisco, 100 Havana, 100 Cienfuegos, 100 Lagos, 100 La Libertad, 100 Las Palmas, 100 Lisbon, 100 M. Video, 100 Mossamedes, 100 Tripoli, 100 Vera Cruz, 100 Cienfuegos, 100	Paraffin Wax — London, 100 New York, 100 San Francisco, 100 Havana, 100 Cienfuegos, 100 Lagos, 100 La Libertad, 100 Las Palmas, 100 Lisbon, 100 M. Video, 100 Mossamedes, 100 Tripoli, 100 Vera Cruz, 100 Cienfuegos, 100	Tar — London, 100 New York, 100 San Francisco, 100 Havana, 100 Cienfuegos, 100 Lagos, 100 La Libertad, 100 Las Palmas, 100 Lisbon, 100 M. Video, 100 Mossamedes, 100 Tripoli, 100 Vera Cruz, 100 Cienfuegos, 100

CHESTER.
ending February 18th.

34 dms. 26 cks.	
60 270 bgs	
um Chloride—	
10 brls.	
um Sulphate—	
1,415 bgs.	
Dyes—	
1 cs.	
Salts—	
1 pn.	
ouc—	
1 cs.	
Soda—	
100 dms.	
ls (otherwise undescribed)	
10 cks.	
10	
3 cs.	
4	
6 cs.	
3 pkgs.	
20 brls.	
Salts—	
64 cks.	
3 cks.	
180 t.	
105	
m Bicarbonate—	
67 brls.	
1 cs.	
28 brls.	
Bicarbonate—	
20 kgs.	
20 brls.	
6 cks.	
10 dms.	
10 dms.	

HULL.

ending February 16th.

30 brls.	
um Sulphate—	
50 bgs.	
907	
150	
71 cks.	
ls (otherwise undescribed)	
28 cs. 1 pkge.	
20 cks.	
5	
29	
100	
10	
22	
4	
7	
1	
ed Oil—	
1,625 c.	
340	
153	
94	
338	
202	
2,113	
620	
2,264	
s (otherwise undescribed)	
1 ck.	
5 bgs.	
6 cs.	
Oil—	
35 c.	
100	
200	
20	
492	
17	
102	

Hamburg, 35	
New York, 177	
Rotterdam, 4	
Stavanger, 55	
Trieste, 192	
Paint—	
Hango, 1 ck.	
Painters' Colours—	
Antwerp, 6 cs. 55 cks. 11 dms. 84 pkgs.	
Amsterdam, 7	
Alexandria, 150 kgs.	
Christiania, 194 44 pkgs.	
Copenhagen, 31	
Drontheim, 120 pkgs.	
Gothenburg, 3	
Ghent, 2	
Harlingen, 10	
Hamburg, 2 cs. 23 4	
New York, 1 50	
Rotterdam, 3 13 35	
Reval, 2 1	
Stavanger, 1 80	
Venice, 21	
Pitch—	
Antwerp, 407 t.	
Bergen, 10 kgs.	
Christiansund, 24 c.	
Hamburg, 1 ck.	
Tallow—	
Hango, 130 cks.	
Rotterdam, 38 tcs.	
Rouen, 24	
Tar—	
Antwerp, 3 cks.	
Amsterdam, 6	
Bergen, 4	
Hamburg, 3	
Treacle—	
Stavanger, 1 ck.	
Turpentine—	
Alexandria, 2 brls.	
Rotterdam, 1 dm.	
Varnish—	
Antwerp, 2 cs. 1 dm.	
Amsterdam, 5 cks.	
Copenhagen, 5	
Ghent, 1	
Rotterdam, 4	
Whiting—	
Amsterdam, 44 cks.	
Hamburg, 20 bgs.	
New York, 67	

GLASGOW.

Week ending February 21st.

Albumen—	
U.S.A., 2,673 lbs.	
Ammonium Sulphate—	
Nantes, 50 t. 15 3/4 c.	
Cullera, 51 7	
Genoa, 61 7	
Valencia, 310 18 3/4	
Venice, 20 3 1/2	
Hamburg, 55 16	
U.S.A., 100 14	
Bleaching Powder—	
Bombay, 4 t. 4 c.	
Candles—	
Algoa Bay, 7,160 lbs.	
Natal, 2,872	
Carbonate of Lime—	
Lisbon, 2 t. 10 c.	
Caustic Soda—	
France, 4 t. 18 1/2 c.	
Coal Products—	
Aniline Colours	
U.S.A., 6 3/4 c.	
Aniline Dye	
Calcutta, 455	
Creosote Oil	
Lisbon, 110 t.	
Pitch	
Bombay, 400 t.	
Italy, 127	
Antwerp, 280 14 1/2 c.	
Barcelona, 127 brls. 75 cks.	
Tar	
Bombay, 22 t. 10 c. 441 mlt.	
Christiania, 30 brls.	
Tar Salts	
Rotterdam, 44	
Coal Tar Products (otherwise un-	
described)	
Rotterdam, 34 dms.	
Copperas—	
Bombay, 41 t. 16 c.	
Calcutta, 17 12 1/2	

Copper Sulphate—	
France, 60 t. 15 3/4 c.	
Cottonseed Oil—	
Fiume, 1 t. 3 1/4 c.	
Dyestuffs—	
Extract	
Canada, 11 3/4 c.	
Logwood	
Lisbon, 6 t. 8 1/4 c.	
Valleyfield, Q'bec, 11 6 3/4	
Glucose—	
U.S.A., 1 t. 3 c.	
Lead Acetate—	
Bombay, 5 t. 2 c.	
Lisbon, 17	
Linseed Oil—	
Bridgetown, 1 t. 3 1/2 c.	
Kentville, N.S., 5 4 3/4	
Manganese—	
Antwerp, 5 t. 17 1/4 c.	
Fiume, 11 17	
Manure—	
Cullera, 50 t. 3 1/2 c.	
Nitrate of Lead—	
Rouen, 10 t. 6 c.	
Paint—	
Gibraltar, 458	
Painters' Colours—	
Bombay, 3 t. 7 c.	
Italy, 54 10 3/4	
Barcelona, 10 3/4	
Barl, 3 14	
Barina, 10	
Fiume, 6 3 1/2	
Lisbon, 6 3/4	
Rouen, 10	
Trieste, 63 8 3/4	
Venice, 19 1/2	
King Wm. Town, 2 9	
Potassium Bichromate—	
Montreal, 6 t. 3 3/4 c.	
Antwerp, 4 19 3/4	
Genoa, 12 4 3/4	
Ghent, 16 1/2	
Leghorn, 12 1/4	
Lisbon, 4 2 3/4	
Naples, 2 1 1/2	
Rheims, 4 19	
U.S.A., 14 10 3/4	
Venice, 8 15	
Rotterdam, 2 1	
Rosin Oil—	
Rotterdam, 440	
Sheep Dip—	
B. Ayres, 3 t. 15 c.	
Soap—	
Bombay, 1 t. 17 3/4 c.	
Calcutta, 2 3 3/4	
Dominica, 1 5	
U.S.A., 2 5	
Sodium Arseniate—	
Lisbon, 2 t. 6 3/4 c.	
Sodium Bicarbonate—	
France, 5 t. 2 c.	
Sodium Bichromate—	
Genoa, 5 t. 3 1/4 c.	
Sulphuric Acid—	
Bombay, 3 t. 15 c.	
Superphosphate—	
France, 30 t. 13 1/4 c.	
Tallow—	
Transvaal, 1 t.	
Treacle—	
Christiania, 28 t. 15 1/2 c.	
Gothenburg, 4243	
Yarnish—	
Calcutta, 105 glms.	
White Lead—	
B. Ayres, 5 t. 5 1/2 c.	
Lady Grey Bridge, 54 kgs.	
TYNE.	
Week ending February 16th.	
Alkali—	
Rotterdam, 4 t. 5 c.	
Ammonium Sulphate—	
Antwerp, 4 c.	

Antimony—	
Smyrna, 8 t. 10 c.	
Arsenic—	
Rouen, 5 t. 10 c.	
Barium—	
Rouen, 17 t. 14 c.	
Bleaching Powder—	
Antwerp, 27 t. 15 c.	
Christiania, 10 3	
Rotterdam, 24 6	
Copenhagen, 25 1	
Trondhjem, 10 1	
Bergen, 7 7	
Borax—	
Smyrna, 3 t. 5 c.	
Caustic Soda—	
Antwerp, 9 t. 17 c.	
Seville, 2 6	
Iron Oxide—	
Rotterdam, 11 t. 4 c.	
Litharge—	
Copenhagen, 6 c.	
Antwerp, 2 t. 17	
Manure—	
Jersey, 188 t.	
Cherbourg, 519	
Ochre—	
Christiania, 4 t.	
Paint—	
Antwerp, 1 t. 5 c.	
Smyrna, 1	
Bergen, 1 2	
Soap—	
Bergen, 2 q.	
Soda—	
Smyrna, 6 t. 10 c.	
Rotterdam, 15 7	
Antwerp, 15	
Christiania, 10 5	
Ancona, 5 3	
Bergen, 6 19	
Frederikshavn, 4	
Sulphur—	
Rotterdam, 1 bx.	
Turpentine—	
Antwerp, 4 c.	
White Lead—	
Copenhagen, 1 t. 10 c.	

GOOLE.

Week ending February 13th.

Benzol—	
Boulogne, 96 cks.	
Chemicals (otherwise undescribed)	
Ghent, 9 cs. 1 ck.	
Hamburg, 2	
Rotterdam, 1 20 dms.	
Coal Products (otherwise undes.)—	
Boulogne, 2 cs. 4 cks. 1 dm.	
Ghent, 49	
Rotterdam, 1 3	
Rouen, 6 2 pkgs.	
Dyestuffs (otherwise undescribed)	
Ghent, 2 cs. 4 cks.	
Hamburg, 47	
Rotterdam, 23	
Manure—	
Dunkirk, 250 bgs.	
Bruges, 602	
Ostend, 444	
Ghent, 655	
Boulogne, 13	
Hamburg, 147	
Painters' Colours—	
Antwerp, 1 ck.	
Ghent, 1	
Hamburg, 2	
Rouen, 1 cs.	
Pitch—	
Antwerp, 500 t.	
Dunkirk, 80	
GRIMSBY.	
Week ending February 16th.	
Chemicals (otherwise undescribed)	
Antwerp, 5 cks.	
Dieppe, 6	
Hamburg, 1 cs. 6 btl.	
Rotterdam, 8	
Coal Products (otherwise undes.)—	
Dieppe, 93 cks.	
Painters' Colours—	
Antwerp, 1 ck. 2 cs. 2 pkgs.	
Hamburg, 2	
Rotterdam, 4	

PRICES CURRENT.

WEDNESDAY, FEB. 27th, 1891

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may

Acids:—

	£	s.	d.
Acetic, 25 % and 40 %	per cwt.	6/9	10/-
" Glacial	"	47/6	
Arsenic S.G., 2000°	"	0 15	0
Fluoric	per lb.	0 0	3 1/4
Muriatic (Tower Salts), 30° Tw.	per bottle	0 0	10
" (Cylinder), 30° Tw.	"	0 3	0
Nitric 80° Tw.	per lb.	0 0	1 1/4
Nitrous	"	0 0	1 1/4
Oxalic	nett	0 0	3 1/4
Phosphoric, 1750°	"	0 0	11
Picric	"	0 0	10
Sulphuric (fuming 50 %)	per ton	15	10 0
" (monohydrate)	"	5	10 0
" (Pyrites, 168°)	"	3	0 0
" " 150°	"	1	5 0
" (free from arsenic, 145°)	"	1	6 0
Sulphurous (solution) S.G. 1025	"	3	0 0
Tannic (pure)	per lb.	0 1	0
Tartaric	"	0 0	10 1/4
Arsenic, white powdered	per ton	14	10 0
Alum (loose lump)	"	4	17 6
Alumina Sulphate (pure)	"	4	15 0
Aluminaferric	"	2	7 6
Aluminium	per lb.	0 3	0
Ammonia, Anhydrous	"	0 1	4
" 880=28° B.	per lb.	0 0	3
" =24° B.	"	0 0	2 1/4
" Carbonate	nett	0 0	3 1/4
" Muriate	per ton	22	10 0
" (sal-ammoniac) 1st & 2nd	per cwt.	39/-	37/-
" Nitrate	per ton	40	0 0
" Phosphate	per lb.	0 0	10 1/4
" Sulphate (grey) London	per ton	11	7 6
" (grey) Hull	"	11	6 3
Aniline Oil (pure)	per lb.	0 0	5 1/4
Aniline Salt	"	0 0	4 1/4
Antimony	per ton	31	15 0
" (tartar emetic)	per lb.	0 0	7 1/4
" (golden sulphide)	"	0 0	10
Barium Chloride	per ton	6	10 0
" Carbonate (native)	"	3	5 0
" Sulphate (native levigated)	"	45/-	to 75/-
Bleaching Powder, 35 %	nett	7	2 6
" Liquor, 7 %	"	3	10 0
Bisulphide of Carbon	"	11	0 0
Chromium Acetate (crystal)	per lb.	0 0	6
Calcium Chloride	per ton	2	2 6
China Clay (at Runcorn) in bulk	"	15/-	to 30/-

Coal Tar Products and Dyes:—

Alizarine (artificial) 20 %	net	per lb.	0 0	8
Magenta	"	"	0 3	9
Anthracene, 30 % A, f.o.b. London	per unit	per cwt.	0 1	1
Benzol, 90 % nominal	per gallon	0 1	1	
" 50/90	"	0 1	1	
Carbolic Acid (crystallised 40°)	per lb.	0 0	5 1/4	
" (crude 60°)	per gallon	0 1	8	
Creosote (ordinary)	"	0 0	2	
" (filtered for Lucigen light)	"	0 0	2	
Crude Naphtha 30 % @ 120° C.	"	0 0	5	
Grease Oils, 22° Tw.	per ton	2	10 0	
Fitch, f.o.b. Liverpool or Garston	"	1	13 0	
Solvent Naphtha, 90 % at 160°	per gallon	0 1	2	
Lucigen and " Wells Oils	"	0 0	2 1/2	
Copper	per ton	39	0 0	
" Sulphate	"	15	7 6	
" Oxide (copper scales)	"	39	0 0	
Glycerine (crude)	"	16	10 0	
" (distilled S.G. 1250°)	"	45	0 0	
Iodine	nett, per oz.	0 0	9	
Iron Sulphate (copperas)	per ton	1	5 0	
" Sulphide (antimony slag)	"	2	0 0	
Lead (sheet) for cash	"	10	12 6	
" Litharge Flake (ex ship)	"	13	5 0	
" Acetate (white ")	"	24	10 0	
" " brown ")	"	14	10 0	
" Carbonate (white lead) pure	"	16	0 0	
" Nitrate	"	18	15 0	

Lime, Acetate (brown)	per ton	5	11	
" (grey)	"	8	11	
Magnesium (ribbon and wire)	per oz.	0 1		
" Chloride (ex ship)	per ton	2	10	
" Carbonate	per cwt.	1	17	
" Hydrate	per ton	17	0	
" Sulphate (Epsom Salts)	per ton	3	0	
Manganese, Sulphate	"	17	15	
" Borate	per cwt.	2	15	
" Ore, 70 %	per ton	4	5	
Methylated Spirit, 61° O.F.	per gallon	0 1		
Naphtha (Wood), Solvent	"	0 3		
" " Miscible, 60° O.F.	"	0 3		

Oils:—				
Cotton-seed	per ton	18	10	
Linseed	"	21	10	
Petroleum, American	per gallon	0 0		
Stearine	per ton	27	0	
Phosphorus (yellow)	per lb.	0 2		
" (red)	"	0 2		
Potassium (metal)	per oz.	0 3		
" Bichromate	nett	per lb.	0 0	
" Carbonate, 90 % (ex ship)	per ton	17	5	
" Chlorate	per lb.	0 0		
" Cyanide, 98 %	"	0 1		
" Hydrate (Caustic Potash) 80/85 %	per ton	21	10	
" " (Caustic Potash) 75/80 %	"	20	0	
" " (Caustic Potash) 70/75 %	"	19	10	
" Nitrate (refined)	per cwt.	1 2		
" Permanganate	per cwt.	2	19	
" Prussiate Yellow	per lb.	0 0		
" Sulphate, 90 % (ex ship)	per ton	9	15	
" Muriate, 80 % (do.)	"	8	12	
Silver (metal)	per oz.	0 2		
" Nitrate	"	0 2		
Sodium (metal)	per lb.	0 2		
" Carb. (refined Soda-ash) 48 %	nett	per ton	4	15
" " (Caustic Soda-ash) 48 %	"	"	4 0	
" " (Carb. Soda-ash) 48 %	"	"	4 0	
" " (Alkali) 58 %	"	"	3 12	
" " (Soda Crystals)	"	"	2 5	
" Acetate (ex-ship)	"	14	5	
" Arseniate, 45 %	"	11	0	
" Chlorate	per lb.	0 0		
" Borate (Borax)	nett, per ton	20	0	
" Bichromate	per lb.	0 0		
" Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton	"	9	15	
" " (74 % Caustic Soda)	"	8	15	
" " (70 % Caustic Soda)	"	7	15	
" " (60 % Caustic Soda)	"	6	15	
" " (60 % Caustic Soda, cream) (f.o.b.)	"	6	12	
" Bicarbonate	"	6	10	
" Hypsulphite	"	5	10	
" Manganate, 30 %	"	16	0	
" Nitrate (95 %) ex-ship Liverpool	per cwt.	0 8		
" Nitrite, 98 %	per ton	29	0	
" Phosphate	"	15	0	
" Silicate (glass)	per ton	5	2	
" " (liquid, 100° Tw.)	"	4	5	
" Stannate, 40 %	per cwt.	3	2	
" Sulphate (Salt-cake)	per ton	0	17	
" " (Glauber's Salts)	"	1	3	
" Sulphide	"	8	0	
" Sulphite	"	5	5	
Strontium Hydrate, 100 %	"	8	10	
Sulphocyanide Ammonium, 95 %	per lb.	0 0		
" Barium, 95 %	"	0 0		
" Potassium	"	0 0		
Sulphur (Flowers)	per ton	7	5	
" (Roll Brimstone)	"	3	5	
" Brimstone: Best Quality	"	3	15	
Superphosphate of Lime (26 %	"	2	7	
Tallow	"	24	10	
Tin Crystals	per lb.	0 0		
" English Ingots	per ton	61	0	
Zinc (Spelter)	"	13	15	
" Chloride (solution, 100° Tw.)	"	5	7	

THE CHEMICAL TRADE JOURNAL

AND
OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

07.

SATURDAY, MARCH 9, 1895.

Vol. XVI.

Contents.

PAGE	PAGE
Notes 157	The Metal Markets 164
Journal 158	Liverpool Oil and Colour Market.. 165
Chemical Industry 159	The Copper Market 165
Companies 160	Tyne Chemical Report 165
Notes 161	Hull Paint, Oil, and Colour Report 165
Business of Petroleum 162	West of Scotland Chemicals 165
Notes 163	New Companies 166
Notes 164	The Patent List 166
Notes 164	Gazette Notices 166
Notes 164	Imports 166
Notes 164	Exports 168
Notes 164	Prices Current 172

ADVERTISEMENT.

ALE, or would take Partner, Small Works,
s from Manchester. Suitable for Soda Crystals, Epsoms, Glaubers,
line.—Address, "W," *Chemical Trade Journal* Office, Manchester.

Notices.

munications for the *Chemical Trade Journal* should be
nd Cheques and Post Office Orders made payable to—

BROS., 32, Blackfriars Street, MANCHESTER.

Our Registered Telegraphic Address is—

"Expert, Manchester."

ms of Subscription, commencing at any date, to the
Trade Journal,—payable in advance,—including postage
of the world, are as follows:—

y (52 numbers) 12s. 6d.
early (26 numbers) 6s. 6d.
early (13 numbers) 3s. 6d.

ill oblige by making their remittances for subscriptions by
st Office Order, crossed and payable to "Davis Bros."

tations for the Editor, if intended for insertion in the
's issue, should reach the office not later than **Tuesday**

reports, and correspondence on all matters of interest to the
nd allied industries, home and foreign, are solicited.
nts should condense their matter as much as possible,
side only of the paper, and in all cases give their names
es, not necessarily for publication. Sketches should be
ate sheets.

Advertisements.

vertisements of Situations Vacant, Premises on Sale or To be Let,
Wants, and Specific Articles for Sale by Private Contract are
Chemical Trade Journal at the following rates:—

Words and under 2s. 6d. per insertion
ach additional 10 words 0s. 6d. "

tisements, Announcements in the Directory Columns, and all Adver-
repaid, are charged at the Tariff rates, which will be forwarded on

ments intended for insertion in the current week's issue
the office by **Wednesday morning** at the latest.

CURRENT TOPICS.

THE PROSPECTIVE POSITION OF NITRATE.

THERE appears to be no end to the formation of nitrate
companies. Of course there is nothing wrong in such
a procedure, but it would perhaps be as well for those who
are interested, to consider what the ultimate effect is likely to
be upon the older companies.

Everything depends upon the regulation of the supply and
demand, and in our humble opinion there is every prospect
of the production being seriously augmented. If this is to be
checked by the restrictive measures of the Permanent
Nitrate Committee, it means a curtailment of business for
many companies, and smaller dividends for shareholders.
The conditions of the Nitrate Combine have, in the past,
been burdensome in some cases even under the old state of
production, and they promise to prove more irksome still
when the output of the four new large companies is added to
the present production.

It may be contended that the dividend of the Rosario
Nitrate Co., which is 12½ per cent., as against 6 per cent. for
1893, is sufficient answer to any pessimistic forebodings. We
scarcely think so. The conditions of working in the case of
the Rosario Co. are exceptionally favourable, and the pro-
spective production is exceptionally unfavourable. The
three new producers actually at work are engaged upon rich
grounds, and capable of a very large output. Further, the
production of the remaining two-thirds of the Lagunas
estacamentos, which are to be worked by the newly-constructed
Lagunas Syndicate, will have to be reckoned with shortly.
Moreover, it must be borne in mind that the works of these
new companies are replete with good machinery and every
modern facility with which to work emphatically good if not
rich *caliche*. Economical production is therefore ensured
even upon a small output, which is not the case with all the
older companies. It is evident, therefore, that the changes in
the output which are pending menace the older companies
in two ways—by hastening the need for the interference of
the Nitrate Committee, and by adversely affecting the limita-
tions of their quotas under the Combine.

The statements about the consumption also present diffi-
culties which must be apparent to all who take a dual
aspect of nitrate doings. It is being constantly reported that
the consumption during the past year has increased by one
hundred thousand tons. This is calculated to inspire con-
fidence, and is approximately true as far as regards com-
parison with 1893, but there the comparison must end. The
returns for the past three years show that in 1893 there was
a serious falling off in the consumption. During the past
year there has been a revival, which has again brought the
total up. As compared with 1892, however, the increase is
much nearer sixty thousand tons than one hundred thousand,
the actual increase upon 1893 being 78,000 tons.

In conclusion, there is one other point which confirms our opinion that it is decidedly doubtful whether the profits of the present year will work out as satisfactorily as those for 1894 promise to do. At the first statutory meeting of the most successful of the new companies started last year, and which was held about four months ago, the chairman said, "There is no fear of the production being in excess of the demand, in fact, I am afraid we shall not be able to supply the demand," and yet the same gentleman a few weeks after was the prime mover in arranging a scheme to limit the production, which scheme in the hands of the Permanent Committee is as good as completed on the understanding that the total production for this year shall be limited to 23,500,000 quintals, an increase of 2,845,000 quintals upon the output in 1893. Such an arrangement should scarcely be necessary if the demand is, or is likely to be, as great as it is represented.

DANGEROUS OCCUPATIONS.

When speaking a month or two ago upon the result of the inquiry into the case of lead poisoning which occurred in the dyeing trade at the end of last year, we stated that it was probable that the incident would result in the dyeing industry being scheduled as a dangerous trade. The statement which Mr. Asquith recently made in Parliament shows our surmise to have been correct. The inspectors have been advised to keep their eye on this trade with a view to the formation of special rules, so that before long the whole trade will experience the unpleasantness of being under close inspection, and be able to sympathise with chemical manufacturers in sharing with them the privilege of providing "dangerous occupation" for their employés. It will be very provoking if the trade has to submit to strict rules on account of the negligence of an individual firm. Fortunately, however, there is another more practical and capable agency than the Government at work. The Chemical Sectional Committee of the Manchester Chamber of Commerce has taken the matter up. There is, therefore, no need to apprehend any excessively rigorous rules coming into force. Though this Committee naturally, in most cases, acts in the interest of the chemical and allied trades, it is worthy of note that in this instance the Committee is not contenting itself with merely watching the progress of affairs on behalf of the trade, but has begun an inquiry into the possibility of finding effective and harmless substitutes for the poisonous chrome lead colours which are at present employed. We trust the issue will prove successful.

SODIUM NITRATE RETURNS.—The Permanent Nitrate Committee's public statistical circular for March shows:—Total exports to Europe, February, 1,300,000 quintals; loading for Europe 1st March, 1,100,000 quintals. Imports: Europe, February, 37,720 tons; deliveries in Europe, February, 74,150 tons; visible supply Europe 1st February, stocks and afloat, 554,020 tons.

SALT SHIPMENTS TO INDIA.—The shipments of salt from all the ports of the United Kingdom to Calcutta, during February, amounted to 35,741 tons, of which 25,923 were cleared from Liverpool. The clearances to other East Indian ports were 5,596 tons, all of which were from Liverpool. The total clearances from Liverpool during the year ended December 31, 1894, amounted to 237,725 tons, compared with 168,805 tons in 1893, and 249,217 tons in 1892.

ISOLATION OF TITANIUM.—According to a paper on the preparation and properties of titanium by M. Henri Moissan, titanium has been prepared in the electric furnace. It requires the most intense heat capable of production, and even then contains at least a per cent. of carbon. It forms friable masses, having a bright white fracture. It is harder than quartz and steel. Its specific gravity is 4.87. The chemical properties are given in detail. Its silicide and boride are as hard as the diamond. The carbide TiC and nitride Ti₃N₄ are also fully described.

Parliamentary Gossip.

SHOT-FIRING IN MINES.

In the House of Commons last week, Mr. John Ellis asked Home Secretary whether, having regard to the proved danger to the manner in which shot-firing was now carried on in many mines, and the investigation, report, and recommendations of the Commission on Explosions from Coal Dust in Mines, he was prepared to introduce and press forward a Bill dealing with the subject.

Mr. Asquith: I have prepared a Bill dealing with fiery and mines, and with the precautions to be taken in firing shots in mines. The recommendations of the Royal Commission have been all taken into framing the Bill, and I hope to introduce it at an early date.

OIL FUEL IN FOREIGN NAVIES.

Mr. Robertson, replying to Mr. Hanbury, who asked a question on behalf of Mr. Gibson Bowles, said: Full information has been received by the Admiralty in regard to the use of oil fuel in foreign navies. The substitution of such fuel for coal does not, in the opinion of our advisers, treble, or even double, the fuel endurance of a ship. The last experiments made under the supervision of Admiralty to test the relative values of oil and coal fuel were in 1889, and it is at present proposed to carry out further experiments of a similar nature. The present conclusion of the Admiralty is that, on the whole, oil is to be preferred to oil fuel in her Majesty's ships.

THE ADULTERATION OF FOOD.

On the motion of Mr. T. Ellis, a Select Committee has been appointed to inquire into the working of the Margarine Act, 1889; the Sale of Food and Drugs Act, 1875, and any Acts amending the same, and to report whether any, and, if so, what amendments of law relating to adulteration are in their opinion desirable.

Legal Intelligence.

SUPREME COURT OF JUDICATURE.

COURT OF APPEAL.

(Before Lord Halsbury and Lords Justices Lindley and Smith.)
CASSELL GOLD EXTRACTING CO. Appellants v. CYANIDE GOLD EXTRACTING CO. Respondents.

In the hearing of this appeal from the decision of Mr. Justice R. Mr. R. Neville, Q.C., in his case for the respondents, referred to plaintiffs' Transvaal patent, and pointed out the difference between the English patent. Continuing, he said it was frequently insisted on by the other side that although gold had been extracted by means of a solution containing cyanogen; yet no process had been discovered with commercial success. The learned counsel submitted that extracting gold with solution was not and never could be a "commercial success." What they got in solution was double cyanide of gold, in that form it was not commercially useful. If a person tried to clear his debts with double cyanide of gold the probability was that it would be refused as not a good legal tender; for double cyanide of gold of no service until it was obtained in a metallic form.—Lord Halsbury: The solution of the gold is an important step.—Mr. Neville: I agree, but there was nothing new in that. The utility of the plaintiff's patent was not denied, and if the patent could be upheld on other grounds, a plea of "want of utility" probably would not be fatal to it. With the state of knowledge for nearly a century before the date of MacArthur's patent was considered, the learned counsel on the other side said, "Oh, yes; this method of bringing gold into solution was known, but it never had been done with commercial success"; that argument did not carry any weight with it, because there could be no commercial success before the gold was extracted. The question was, aye or no, had gold been brought into solution by a process containing cyanogen before the date of the plaintiff's patent? What the patentee was driving at was to get his gold into solution, and he did but he did not invent any new process for that. The only process to take an open vessel and in that treat the gold in the ore with solution containing cyanogen. That was an old process applied in an old way to an old material—sub-divided gold—for an old purpose, namely, getting the gold into solution. Really the only discovery made by the patentee was the alighting on an ore yielding the most valuable results when treated in this manner. Mr. MacArthur found it in Africa, in an extremely divided state, and not seriously admixed with compounds of the baser metals, which were very troublesome in endeavouring to get the gold out of the solution.

Sir R. Webster, for the appellants, said the case was one of great importance and of extreme difficulty, and from first to last, in the court below and before their lordships, he had not attempted to present it in any other light than one involving very difficult questions. Throughout the whole consideration of the case in the court below

seemed to have been impressed with the view that there for his decision except the subject matter of the patent as effected by the state of public knowledge of his specification. The first and most important point to again and again at every stage of the argument was that, in the court below, he (Sir Richard) either led them to believe that he abandoned the claim action. This point he intended first to consider in his second point was what was the proper construction of specifications; and here again some little difference between him and his learned friends, who stated that in the court put a construction on them different from that which was sent before, their lordships. The third question dealt with was that of "disconformity" between the complete specifications; but assuming that he could establish that he was right with regard to selective action, of disconformity would not arise. The fourth point was, and that would depend on the construction of the specifications and the subject matter of the patent. He dealt with Rae and Simpson's patents. With regard to the first point (selective action), it there had been any question about his position on behalf of the Cassel Company his own fault; still, he averred that, looking through the proceedings from beginning to end, there was no trace of any counsel which could have misled them, and from here was nothing in the evidence which could induce the selective action had been given up. It was first of all to understand clearly what it was that he meant by selective action. He meant all through this case was that a dilute solution of potassium within certain proportions did, in fact, have an action on ore, that it did extract the gold and silver, and leave the other metals behind. He had never suggested that there was any other metals—that the iron and copper, &c., were left behind; that if the solution were of greater strength, the base metals also be brought into solution, and then there would be no action in extracting the gold from the solution. There never was any question of "order," but a question of how to treat large quantities of ore by the ton to the best commercial advantage. A weak solution of potassium had a "selective" action to this solution solved the gold and silver and left behind the bulk of copper and whatever metallic substances there were in

the ore. Sir Richard said he certainly never understood that Sir Richard intended to abandon, "selective" action. Webster said that during the trial in the court below of a depressing atmosphere surrounding counsel for the plaintiff because Mr. Justice Romer, from the very opening, put the view that there was no subject matter for the patent. And again that the plaintiffs' patent was only for applying dissolving gold by cyanide of potassium—a process per se, and, taking that view, he seemed to think that the plaintiff was beside the mark. Referring to the provisional specifications, Sir Richard was unaware that he had ever said that his claim was for any particular strength of cyanogen. His specification was a general claim, and the complete specification was for a solution proportioned to the amount of gold and silver in the ore to be treated. In the first claim the solution was described, and the second stated in effect that the solution must be proportioned to the gold in the ore, not strength, but with regard to quantity. If the ore was weaker, then the strength of the dilute would not be the same—its bulk—the strength being the same.

Otherwise its action would be destroyed.

Webster agreed the strong solution would attack the gold and so render it difficult to get the pure gold out of the ore. Messrs Dewar, Austin, and Cooke, and Mr. MacArthur, were on this point. After dealing with Rae and Simpson's patents the learned counsel said, in conclusion, the action was for damages, but simply for an injunction to restrain and he submitted that a case had been made for reversal of the court below.

The court took time to consider their judgment.

HIGH COURT OF JUSTICE. CHANCERY DIVISION. (Before Mr. Justice North.)

SALT UNION v. THOMPSON.

Mr. Justice North, on behalf of the defendant, said that terms had been made, which put an end to the actions. He reminded him that the first action Mr. Dickinson had been appointed to defend the defendant's works, and his report had been in favour of the defendant. Under these circumstances, the Salt Union had withdrawn

all the charges made against Mr. Thompson, and in respect of the inconvenience he had suffered in regard to the undertaking he had given the plaintiffs agreed to pay £150. by way of damages. His lordship would remember that it was stated during the proceedings in the first action that men in the employ of the Salt Union had entered the defendant's works, and had endeavoured to obtain samples of his brine. After Mr. Dickinson's report the act seemed to have been repeated, and, unfortunately, one of the workmen engaged in the trespass was killed in his endeavour to go down the defendant's shaft.

Mr. Swinfen Eady, on behalf of the Salt Union, said that with regard to the trespass by their men, it was not by any direction of the Union, but was expressly contrary to the orders of the general manager. Of course, it was a matter of regret to the company that such a thing should have occurred.

Mr. Justice North accordingly made an order upon the first action in the terms arranged, and with regard to the action of Mr. Thompson, stayed all proceedings.

SOCIETY OF CHEMICAL INDUSTRY. MANCHESTER SECTION.

A MEETING of the Manchester branch of the Society of Chemical Industry was held last week in the Victoria Hotel. Mr. R. F. Carpenter presided. Amongst the papers read was one by Mr. G. H. Hurst on "Modern developments in the colouring of textile fabrics." Mr. Hurst explained the manner in which recent changes in the colouring of textile fabrics had been brought about. The progress made in industrial chemistry had led to the production of materials of greater purity, and that, in turn, had enabled the textile colourist to obtain greater brilliancy of colouring than was possible a few years ago. One of the most surprising features in the whole range of colour chemistry was the production of colour by the union of colourless bodies, examples of which might be met with not only in the domain of organic chemistry, but also in that of inorganic chemistry. He pointed out that the simplest azo compounds were insoluble in water, and in consequence not usable in dyeing, although they had lately been employed for pigment colours in calico printing. If they could be produced direct on the fibre it was obvious that we ought to be able to produce colours of considerable fastness. These insoluble azo colours were applicable in calico printing, and some fine effects had been produced by them. Besides the new dyes used in colouring cotton material, Mr. Hurst dealt with a number of the new dyes used by calico printers. The new series of azo dyestuffs were, he thought, destined to become very extensively used.—A paper on "Notes on certain silver alloys" was read by Mr. G. J. Fowler.—A discussion followed the reading of each paper.

SCOTTISH SECTION.

This section has been suffering from the very untoward weather for the last two months prevailing, and in no small degree also from the widespread sickness which has been one of the worst consequences of this almost unexampled meteorological severity. On the programme for the session there was a meeting to be held in Edinburgh, for Tuesday, February 5th, but at the last moment the Council exercised a wise discretion, and notified members that the meeting so billed was to be waived. The next meeting on the list was for Tuesday, March 6th, to be held in Glasgow, and this the Council saw fit to implement, although circumstances, including membership sickness, were still strongly antagonistic to anything like success. A concurrent drawback has been the almost complete absence of any disposition on the part of members to come forward with papers, a manifestation not to be wondered at during the course of such a winter, when it is borne in mind that even in the most favourable times the procuring of suitable papers is always in some degree a difficulty with the hon. secretary and Council. The meeting convened for Tuesday, the 5th inst., proved to be a record gathering in the sense that it was the smallest in the history of the Section, whether as regards members of council or ordinary members; and, indeed, for some minutes after the stated hour of commencement it looked as if there was to be no meeting at all. The arrival, at the last moment, of two or three belated attenders encouraged the very scanty muster of members to proceed. In regard to a paper for the occasion, Professor E. J. Mills, F.R.S., of Glasgow, had kindly undertaken to prepare and read over the results (so far) of a series of experiments on the "Action of Gelatine on Saline Solutions." These experiments have for some time been in progress by Prof. Mills and Mr. W. D. Sawers, A.I.C. (of Cassel's Gold Extracting Co.), in collaboration, and they are to be continued to more definite conclusions some time in the future. The paper itself, being largely made up of figure results, does not lend itself to any useful indication within a space so limited as that to which this is confined; but it will be found well worthy of the study and attention of members generally when it reaches the stage of detailed publication in the Journal of the Society. A vote of thanks, to Professor Mills and Mr. Sawers conjointly, brought the proceedings to a close.

Reports of Companies.

THE SHARON CHEMICAL COMPANY, LIMITED.

The fourth ordinary meeting of the Sharon Chemical Company, Limited, was held on Tuesday, at the Royal Hotel, Victoria-street, Derby; Mr. F. J. R. Carulla being in the chair.

The Secretary (Mr. E. M. Glover) read the minutes of the last meeting, which were confirmed.

The Chairman then said: They were gathered together under circumstances in some respects similar to those of the last meeting. They had to consider the results of a year of bad trade exactly as had to be done on the last occasion, and unfortunately again without the appearance of a change in the continued trade depression. Under such circumstances it was certainly a great satisfaction to the directors to be once more able to recommend a dividend of 6¼ per cent. for the past year. The shareholders would notice from the accounts that the promise to put down appliances to economise fuel had been kept. The coal bill was thus becoming a diminishing quantity, and this, together with the complete wiping out of the balance on account of preliminary expenses was equal to paying more than 2½ per cent. in dividend. They would therefore recognise the improved position in which the company was now placed.

Mr. Brown proposed the approval of the report and accounts, and that a final dividend of 1¼ per cent. on the called up ordinary capital of the company be paid on March 31st, making with the interim dividends already paid 6¼ per cent. for 1894. He congratulated the company on being able to do this, and thought it was something to boast about in these times.

Mr. Walley seconded the proposition, which was carried unanimously.

Mr. Glover announced that it was thought desirable by the directors to make a slight change in the mode of paying future dividends. Up to now two interim dividends had been declared in the year, namely, one in June and the other in December, the final distribution being made in March. It will be more convenient to have only one interim dividend, to be declared in September, paying the final dividend in March, as we are doing now. There will thus be only two distributions, at intervals of six months, and we shall conform more to the practice that has been found to be the best by other companies. He would remark that Mr. Arnold, who he was sorry to say was unable to attend the meeting owing to indisposition, suggested a similar thing in a letter that had just been received.

After a vote of thanks to the directors, which Mr. Glover acknowledged, the proceedings terminated.

THE SANITAS COMPANY, LIMITED.

The eighteenth ordinary general meeting of this company was held recently, at the offices, Three Colt-lane, E., Mr. F. H. L. R. Moll being in the chair.—In seconding the report, moved by the Chairman, Mr. C. Kingzett, F.I.C. (managing director) said: I do not propose to detain you at any length with any remarks I may have to make. It may, however, be interesting to you to know that we have placed on the market during the year which is now at an end two or three new articles, one of which is the Sanitas shaving stick. We do not expect to command a very large trade in it, but we hope those of you who have occasion to shave will not forget to use it. Then we have placed on the market a more important article—namely, a patent sulphugator. It is an appliance for disinfecting small spaces by fumigation by sulphur. On the occasion of our last meeting I showed you Kingzett's sulphur candles, which were designed for fumigating by the same means hospital wards and rooms in the case of infectious illness. Now we have gone one stage further, and provided an appliance which is suitable for disinfecting small spaces—rabbit hutches, dog kennels, stables, &c. Another preparation that we are about to place on the market is *Sanitas eucalyptus soap*. In addition to our Sanitas lines, we some years ago, when certain firms tried to take away from us the credit that was due to us in reference to eucalyptus oil, placed on the market some lines of eucalyptus oil disinfectors, &c., and now we have the *Sanitas eucalyptus soap*. Our chairman adverted to the increasing competition that we are experiencing year by year, and I can assure you that it is a matter of very great concern to us in several ways. Years ago we made a very good show in advertising by the expenditure of a very few thousands of pounds per annum. Now competition is such, and the advertising of other firms so extensive, that we have to expend two or three times the sum of money that sufficed in former years to get a similar result, and you will at once appreciate, therefore, that in a corresponding ratio the difficulty of earning for you the same dividends that you have had for some years past grows. The competition, as our chairman said, is not fair, according to our thinking. I will go further, and say it is eminently dishonest in many respects. As an example, here in this bottle is a disinfectant which is advertised as

non-poisonous, and there, in another bottle, is the amount of caustic and cresylic acid which has been extracted from it—namely, 2 cent. (Applause.) That is a statement which you need not take from me personally exclusively, because I have backed up the statements which have been secured by my assistant, Mr. Humphrey, by an independent analysis made at the hands of public analysts; their reports agree with our own results. Well, gentle- that is eminently unfair and dishonest, and I only hope some means will be presented to us whereby we can, now or later, let the public know what they are very often using under title of non-poisonous disinfectants. (Applause.) Allow me to back for one moment and show you the sulphugator for disinfecting small spaces. It is composed of a roll of textile fabric which has steeped in molten sulphur and then rolled. By making the roll of given size we can say that it is sufficient for disinfecting 100, 200, 400, or 500 cubic feet space, according to circumstances, and enclosed in a small cage which has been designed for burning it might, perhaps, be allowed to say one word with reference to decreased dividend. We could have paid you 15 per cent.; but had very good reason for not doing so. We are all agreed that we are short of working capital, and we resolved not to touch our reserve fund, which is a real reserve fund, and not a paper balance. (Applause.) As I say, we could have squeezed out 15 per cent., but we are short of working capital, and we, as prudent men of business, do it eminently desirable that you should be content this year with 6 per cent. (Hear, hear.) I hope you will agree with us in this is enough. Do not forget, gentlemen, that these large dividends constitute one of the greatest evils attendant on our business—in this that it is the fact that we can pay such big dividends that encourage other firms, good and bad, to enter into competition with us. There is no doubt about that; and it is very often a matter of concern with that our capital is not larger and that our dividends are not so. With regard to the issue of new capital, he said more working capital was required, and he thought the time had come when the directors ought to issue some or all of the remaining capital. (Applause.) He wished, therefore, to take an informal expression of opinion on the subject, because, although the directors had power to issue the shares still unissued, they promised some years ago not to make further issue without consulting the shareholders. They did not all the £10,000 at present. He thought it would be best to issue shares at par, and to divide them amongst the shareholders according to their present holdings.

On the motion of Major Carter, seconded by Mr. Steffen, the meeting gave an informal expression of opinion in favour of the issue of capital.

THE BRITON FERRY CHEMICAL COMPANY, LIMITED.

At the ninth general meeting of this Company, held at the office Queen-street Place, E.C., Mr. E. A. Pontifex, in moving the adoption of the accounts and report, said: I have much the same story to tell this year as last—the circumstances are identical—only more so. It is to say, we have had to deal with much lower prices than during the previous year; but we have more than compensated for this by increased output, resulting in a large profit. As we get the bulk of our raw material—viz., the sulphurous acid gas—for nothing, so our fixed charges are met out of our surplus make is mostly profit. We sold during the past year 20,000 tons of acid, as against 16,657 tons in 1893, and the cost of its manufacture has been further materially reduced, viz., from 13s. 7d. per ton in 1893 to 11s. 2d. in 1894, on account of the cause I have just now alluded to, supplemented by some further economies in the cost of manufacture. The price in the prices obtained for our acid in 1894, as compared with 1893, was 3s. 3d. per ton, being equal to £3,200, against £3,200, but, notwithstanding that difference, the actual result of the year's work shows a profit of £732 more than for 1893; so that had the price remained identical during the two years the profit for 1894 would have exceeded that of 1893 by £3,932, which is the measure of the improvements and economies that have been effected. It would be manifestly politic, if it were practicable without unduly reducing the price of acid, to continue this course of increasing our output; but we are now to have pretty nearly saturated the district with our supply, and can hardly expect—at all events, until trade revives—to materially increase our present rate of sale. We are mainly dependent for our customers upon the tinplate trade, and this is in about as bad a condition as it can possibly be. There have been some failures in the tinplate trade, among which are one or two of our chief customers; but the agency arrangements we have, any loss by way of bad debts, will not fall upon this company. It is very gratifying, in these adverse circumstances of trade, to be able to recommend the declaration of the same dividend as last year, viz., 10 per cent., and still more gratifying to be able to pay this after having written off such substantial sums from our chamber and columns renewal account, and from our reserve. To the former we have added £1,000, for the year and to the latter

£1,000., making them £12,000. and £4,000. respectively, with a total capital of only £31,250., may be considered a very portion of reserve. You will also notice that we have made a reduction in the amount of our debentures, which now £6,150., it having been further reduced to the extent of £1,350. the past year. A proportion of the debentures which was due off at the end of the year, viz., £2,500., has been renewed at a rate of interest—5 per cent., instead of 6 per cent.—and we find that the holders of the debentures which fall due at the end of such of them as we desire to renew, will renew at the same rate of interest. The result of the reduction of the debenture at the amount paid for interest has been lowered from £526. to £423. in 1894, and for the current year there will be a still decrease. In face of the adverse condition of trade generally, intensified in our special branch of it, I think you will agree that we have reason to congratulate ourselves upon the results of last year's working.—The report was adopted.—In responding to a vote of thanks, the Chairman said it was a satisfaction for us to have made in these bad times profits as good, or nearly as good, as we had ever made, and to consider also that they did this out of all other things but waste product—product that other people were not getting, but which they had turned to such good profit, while at the same time relieving the district in which they worked of what was a poisonous gas. It was a pleasure to be connected with a coming profit in the present disastrous times.

CUTCH IN BURMAH.

[BY OUR BURMESE CORRESPONDENT.]

(Continued from p. 119).

PROCESS OF MANUFACTURE.

The ordinary process of manufacture, as carried on in Burmah, has been described as follows in the report by Mr. Corbett, Deputy Commissioner of Forests, already referred to:—

Trees having been selected, are felled and dragged to the place, where they are deprived of bark and sap-wood, and cut into convenient lengths (generally about 7 feet). The next operation is chipping of the wood. The logs are placed at an angle of 45°, with one end resting on the ground, and the other resting on a support (generally the fork of a tree) fixed in the ground, and a man of a large heavy *dah* (knife) converted into chips, about one square and a quarter of that in thickness. No doubt if the chips were smaller the cutch would be easier to extract, but there is the disadvantage of the chips rising in the liquid and getting clogged with the extract, thus causing a diminution of its value. The place consists of a temporary shed in which the logs are cut and near this (under cover during the rains and open during the dry season) are one or more large pans which will each contain 20 or 25 gallons, each placed over a large fire-place dug out of the ground. Round each pan are ranged from 20 to 24 earthenware pots, each about 3 gallons. These pots are generally placed in a narrow trench, into which the firewood necessary to heat the pots is put. As many chips as the pots will hold are put into them, and water is poured in until they are nearly full, and after about 24 hours until the liquid is reduced to about half its bulk. The liquid from as many pots as it will hold is then poured into the big iron pan and boiled until the bulk is considerably reduced.

More liquid from the pots is then added, and the process is repeated until the liquid from the whole of the pots has been made use of. The chips remaining in the pots are rejected, fresh chips are put in, and the process is repeated. The liquid in the cauldron is boiled until it attains to a viscous consistency (constant stirring being during this part of the process). The cauldron is then taken up, and, to prevent the extract from solidifying at the top, it is constantly stirred with a flat piece of iron, shaped like a paddle until it is cold enough to be handled. It is then poured into a brick-shaped mould, generally lined with leaves, to cool. The result is a mass of dark cutch varying in colour according to the quantity of keersal contained in the wood.

In the management of one cauldron three men are necessary, one to drag the logs to the cooking-place by means of cattle or horses, one to clear the logs of bark and sap-wood and convert them into chips, and one to attend to the boiling of the pots and cauldron. It is surprising to find that these boiling-down pans, which are saucer-shaped of cast iron, and about three feet diameter at the top, and very thin, come from China packed in nests, and brought across the Northern frontier mountains on mules, many of them arriving at Bhamo, from whence they are sent to the Irrawaddy and distributed all over Burmah. John would buy them of English make if they were as good and

ADULTERATION.—The adulteration of cutch became a serious evil a few years ago, and the European exporters suffered considerably in consequence, not only by depreciation in quality but by loss in weight, for the adulterant had the unfortunate knack of disappearing in transit, or before it reached the consumer, the remaining cutch being also deteriorated thereby. The artful Chinaman distributor, in whose hands the trade has become a close monopoly in Burmah, taught the simple Burman producer how the quantity could be greatly increased, the quality being a minor consideration for the foreign consumer.

The chief source for adulteration was found to be *Than* (*Terminalia Oliveri*), but there was no reason why a fair quantity of leaves and dirt should not enter into the composition of each block of cutch, provided such solid impurities did not appear on the surface.

The bark of the *Than* tree, after being chopped up fine, is boiled in water in earthenware pots until all the essences are extracted from the bark. The liquid thus obtained is boiled with the essences similarly obtained from the chopped-up wood of the cutch. Cutch thus adulterated can be detected as follows:—If only a little *Than* is used, little or no harm is done, but the resulting cutch is of a slightly brighter colour and more metallic. If large quantities, however, of the *Than* be used, the cutch cakes break with a peculiar metallic fracture, are less bitter in taste, and have a slightly different smell. When largely adulterated with *Than*, cutch loses its good properties, goods dyed with it lose their colour when washed, and, owing to the absence of tannin, leather tanned with cutch thus adulterated is of little value.

In the report of the Chemical Examiner, Rangoon, *Than* is described as being "a red-coloured gum or mixture of gums, insoluble in spirit, and having no action on polarised light. Under some circumstances it ferments and evolves gases. It contains no leather-forming property, but is thrown down by gelatine and alum. If, however, this precipitate is boiled in water, the *Than* is dissolved."

A large amount of re-melting goes on in Rangoon chiefly by the Chinamen, and it is here that a great deal of the solid impurities are added to the native or virgin cutch. Their custom is to mix the soft with the hard cutch, and it is considered quite good enough for the English market if this mixture be held together by 25 per cent. of "go down" sweepings, for as a rule it fetches as much as the purest quality imported, and it is generally supposed here that the English market does not know good cutch from bad. I do not quite believe this latter statement in its entirety, but to whatever extent it may be true, it is not creditable, and should be inquired into by the consumer at home. I can speak for several of the largest Rangoon exporters, who have successfully induced the Indian Government to place such restrictions upon the manufacture as will prevent the use of *Than*, and otherwise improve the quality, and if the consumers will only be careful, and reject every parcel which contains more than 3 or 4 per cent. of solid insoluble impurity, the quality will quickly improve. The soluble impurities are being prohibited by strict forest regulations, and there need be little or no difficulty about the insoluble additions. When the cutch arrives in Rangoon it is sold indiscriminately in lots as landed good and bad together, to the European export houses. They ship it to England without much selection, under their own brand or letters, but home buyers will do well to make their purchases upon inherent merit rather than upon the name of a district or the mark of a firm whose knowledge of the quality can only at the best be superficial.

(To be continued).

PRESERVING THE COLOUR OF FLOWERS.—The following method of preserving the colours of dried flowers, applicable to even the most delicate poppies, has been discovered by Herr Nienhaus, a German chemist. Ammonia in the air is the main cause of flowers losing their tints, so Herr Nienhaus presses his specimens between paper which has been previously saturated with a solution of 1 per cent. of oxalic acid in water.

THE RIVER WEAVER NAVIGATION.—The Runcorn and Macclesfield Boards of Guardians, this week, ordered the seals of their respective Boards to be affixed to the Wirral Union's petition in support of the opposition of the Cheshire County Council to two Bills promoted by the Salt Union, Limited, and by Messrs. Brunner, Mond and Co., praying that the surplus revenue of the above-named trust should be devoted to the reduction of tolls instead of being handed over to the county towards the reduction of rates.

THE SUGAR CRISIS IN AUSTRIA.—Reference was made some time since in these columns to the serious position of this industry in Austria. Last week, in the Budget Committee of the Reichsrath, Dr. von Plener (Minister of Finance) said that the crisis in the sugar industry in Austria was merely transitory. He opposed any reduction in the export premium, and referred to the agitation in other countries for the increase of such premiums. The Minister also declared himself opposed to any reduction in the import duty on sugar. He referred to the satisfactory increase in the exports of refined sugar, and declared that the Government did not favour any endeavours to form a syndicate for the purpose of raising the prices of sugar in Austria.

THE WORTHLESSNESS OF PETROLEUM INQUIRIES.

IT is much to be regretted that the elucidation of the truth about the "flash-point" of oils is so greatly hindered by the unsatisfactory nature of the inquiries which have from time to time been made. The present inquiry bids fair to be as big a farce as former ones. Taking the witnesses examined at the inquiries held in 1872 and 1883, out of a total of 38, as many as 20 were interested in the petroleum trade, 4 in paraffin, and only 14 could be called neutral. The evil of this was evidenced in the discussion on the difference between the old open 100° test and the then new close test (Abel's), for those interested in petroleum made the difference 15°F., while neutral witnesses made it 27°F. Such discrepancies surely called for further impartial investigation.

T. Graham Young, Esq., who is in no way interested in the Scotch oil trade, has recently prepared a valuable review of the position of the flash-point question, from which the following extracts are taken:—

ONE-SIDED EVIDENCE.

An extremely important point, which was not brought out in the evidence of past inquiries, is that the Abel test does not give the point at which an oil flashes under conditions of ordinary use, owing to the small size of the oil vessel in the testing apparatus. An oil flashing at 73°F. by the Abel test may flash considerably below this in a lamp, hence the extreme caution required in storing such oils in large vessels, such as tanks, &c. Again, another very unsatisfactory point about the evidence is the one-sided statements made by men of experience, and, if not biased opinions, they often strike one as surprising, coming, as they do, from men whose scientific and general knowledge would suggest ideas more in keeping with accuracy, and which, if advanced in any law court, could not have passed unchallenged. One is painfully impressed with the idea that the destruction of life and property appeared to many to be a secondary consideration in disputes and personal gain. A few examples will suffice.

Dr. Lettby: "I have made a number of experiments with oils, flashing it at 100°F., open test, and cannot explode a lamp. These oils have been in the hands of the poor for years, and I know of no well-authenticated instance of lamp explosion."—Hundreds of indisputable lamp explosions had occurred before this time, and were constantly taking place, yet this evidence is taken as reliable.

Mr. Gamell: "No explosions have occurred from petroleum, only fires from knocking over lamps."

Mr. Redwood: "It does not follow that because an oil flashes below 75°F. it is any more dangerous than one which flashes at 73°F. or above it."—To any ordinary scientific man who looks upon the use of oil for lamps or stowage, this is certainly a startling statement. It amounts to this, that petroleum spirit is no more dangerous than oil flashing at 120°F.

Mr. Phillips: "I should like to state that vegetable oils are equally inflammable with petroleum flashing at 73°F."

Colonel Majendie: "I think the broader aspects of the subject (stowage, &c.) are things which concern the public, not the 'flash-point.' A lamp explosion may kill one or more persons, but it cannot mislead a quantity of oil and set fire to docks and houses."—If a lamp explosion had taken fatal effect in the household of the utterer of this sentence, it would not have been in print. Some think that if the raising of the flash-point would save life, it would be an important matter for the public; but life is evidently not of equal importance to property.

Colonel Majendie: "With regard to the storage and domestic use of oil, the danger does not depend upon the 'flash-point.'"—We are asked to believe that petroleum spirit is equally safe with oil flashing at 100°F.

Colonel Majendie, in answer to a question as to whether or not it would be dangerous if a barrel of oil flashing at 73°F., were exposed to a summer temperature above 73°F., said: "I do not think any anxiety need be experienced in reference to the fact that the figure is 73°F., whereas the temperature of the air is above 73°F. Oil in a barrel will not be giving off its vapour at these temperatures; it is only when oil is put into a cup and tested in a particular way that you get this flash-point of 73°F."—It does not matter how the oil is heated in a barrel—by the sun, or any other source of heat; so long as the medium surrounding the oil is at a higher temperature than that at which the oil flashes, the oil will give off inflammable vapour. It would be a truly dangerous experiment to heat a barrel one-half full of oil flashing at 73°F. to, say, 90°F., and apply a light to the bung-hole; it would demonstrate the absurdity of such ideas.

Mr. Spencer, in answer to a question as regards raising the flash-point, said: "The temperature in this country never reaches 100°F.; so, so as to flash under 100°F. open test, there is no danger, as it remains so inflammable vapour under ordinary conditions of use."—This most surely have been said in ignorance; as any chemist should know that oil in a closed vessel, such as a lamp, may flash at 73°F. or

even under it, so a temperature of 90°F. outside of it was dangerous.

Mr. Spencer: "I believe the flash-point of an oil in a safety lamp is used."—If safety lamps are perfect and independent of the "flash-point," why not burn petroleum spirit? The fact of resort to "safety lamps" on account of lamp explosions, go far to prove the danger of low-flash oil, and the serious result of explosions. No one will deny the utility of metal lamps in a case of setting, but to invent a metal lamp with the purpose of withstanding the force of an explosion is like allowing the indiscriminate manufacture of explosives, and advising the wearing of suits of armour in carrying bricks, etc., becoming unpleasant. A safe oil is wanted, in addition to a safety lamp, which is only safe when in skilled hands in good order.

THE ORIGIN OF THE SO-CALLED "AGITATION."

In the course of evidence, it has been frequently stated by those who are looked upon as the best informed witnesses, that, until within last two years, the raising of the flash-point had never been brought before the public.

To give the history of the agitation, from the introduction of petroleum to the present, would be a heavy task, and the process wearisome, but it would show very fully that the witnesses had in ignorance of well authenticated and circulated facts. To give an idea as to how matters stood immediately after the introduction of petroleum will be quite sufficient.

Take, for instance, a few examples about the year 1862:—

February 27, 1862. Inquiry into fatal lamp explosion held before Middlesex Coroner. Dr. Odling examined: "The oil was petroleum and gave off inflammable vapour at 90° to 100°F." open test. The jury's verdict was that "death was caused by dangerous oil." It was also stated for the public benefit that no explosion had taken place for ten years with Scotch oil, i.e., since its introduction.

February 1. An article appeared in the "Builder," stating that the importation of such dangerous oil as petroleum was a menace to public safety, and was sold by foolish knaves who were appointed agents to make more profit than with paraffin.

March, 1862. An article appeared in the "Weekly Dispatch" warning users of oil against American petroleum, as many lives had been sacrificed by its use.

March, 1862. The "Athenæum" published a series of papers with American and Scotch oil, the latter, heated to 130°F. in a dish, did not ignite on the application of a light. Some American oil ignited at 46°F. Many other instances might be given. In later years the subject has received repeated attention from newspapers and insurance journals.

THE QUESTION OF PRICE.

The present aspect of this point has already been satisfactorily explained in these columns, but the following is instructive in itself from the evidence of past inquiries, how the cost "bangle" is constantly set up by those interested in petroleum. The use of which several of the witnesses gave their evidence would lead one to believe that they had learnt the same story off by heart. One point in particular was that the raising of the flash-point would prohibit the importation of petroleum, and so raise the price of oil for the poor. A few extracts will suffice.

Mr. Redwood, in answer to a question whether a close test of 85°F. would affect the importation of petroleum, said: "Such a test as now comes to this country clearly could not be imported; ordinary petroleum would be entirely shut out."

Mr. Conheim, when asked what effect 85°F. flash would have, said: "I think it would render legitimate exportation from the States next to impossible; houses of any standing would at once draw from the trade."

Mr. Garrard: "I think 85°F. would virtually exclude the importation of petroleum." When asked if a test of 80°F. would exclude American oil, he said "It would."

Mr. Goddard, asked as to the effect of 85°F. test, said: "There would be such a complaint from the poorer classes that you alter it to 75°F."

The above examples show the strong bias of many of the witnesses towards anything which would affect their own business—be it the raising of the flash-point or the raising of the price of oil. But does it seem strange that our laws should be framed upon such evidence, and merely to create a bias to serve selfish ends?

In 1867, when 73°F. oil was selling at 2s. per gallon, it was estimated that the refining cost 2d. per gallon, and the taking out of 10% more spirit to raise the flash to 100°F. close test would barely to 3d. per gallon. Again, the price of refined petroleum in Pennsylvania in 1893, sold at the refinery at 2 cents, or 1d. per gallon for 73°F. oil, and 1½d. for high-test oil; this includes cost of refining, so it is impossible that the extra cost of refining 73°F. into 100°F. oil, if done in America, could be above one-tenth of a

not placing any value on the spirit taken out, as it is certain ner would never be charged anything extra for a perfectly The flash point has been kept down by the petroleum people, it rid of a large proportion of their spirit in the burning oil ; gh in America the authorities have made such an oil impos- own advisers have been so foolish as to abstain from doing

Our authorities do not hesitate to increase the price of oil orage regulations ; but to touch the vital point, *i.e.*, the flash y seem determined to ignore it.

lins : " American exporters of petroleum could, without the alty, conform to the test if it were raised."

a put forward that the poor would be oppressed by raising the is a hollow sham. If the petroleum people are left in sole of the oil market, very little consideration will be shown for rept the shareholders of those great combinations.

THE REASON WHY.

ation in favour of raising the flash point has always been it by those interested in the sale of petroleum. The cry has ar trade is imperilled ; we must save it," and so far they ged it ; but it is to be hoped that the rising generation will be k on these matters with a clearer and less biased mind, and ent accordingly.

pected by many that the deliberations of the Committee ointed to consider the whole question of inflammable oils g forward several witnesses whose evidence would be of ; but, before more than two witnesses had been examined, ment between the Standard Oil and the Scotch Oil Com- ooted, and one of the terms of agreement laid down by the hat the latter take no part whatever in the flash point agita- ; serves to show the influence and power wielded by the ompany. They know that the different States in America ly increasing their flash point, although, as it stood, it was n ours considerably ; and, seeing this country and the as been the outlet for their low-class oil, they are afraid gland goes for high-flash, then Germany will follow, and much prefer it to remain as it is, as it would cost them a to produce high-flash oil, which they could not charge to er, and they would require to get rid of a much larger petroleum spirit.

re arrangement has been made by the Standard Oil Com- re their own ends, which in this case is to have the flash point

F. They know that if the Committee decide to leave the as it is, they are safe for many years to come. The reputa- this Company enjoys in America is very forcibly put in gainst Commonwealth," by Henry D. Lloyd (New York :

Brothers). " The control of these pipe lines, the remorse- g out of rivals, the formation of a solid combination with runk Railways, the buying up of newspapers whose mouths closed, and even of courts, which refuse justice, have Standard Oil Trust to occupy the impregnable position of holds to-day. Independent producers were shut out from markets, and freedom of trade in an article of daily use to exist. The plain honest man in the street who fondly at industry, intelligence, and thrift are the sole qualities business success to-day will have his eyes opened when he ls out from this narrative how ' business ' is done, or may be y. ' By reducing the volume of business one-half, by in- profit from 34 cents a barrel to 205 cents, the reconcilers 5,345 dollars in four years, on an investment of 10,000 no work.' They thought it, doubtless, ' good business,' d business has been expanding up to the present day."

the men who have got the ear of our experts and Govern- rs. It is to be hoped that the public common-sense will they shall not fix our flash point for burning oil.

P CANAL COMPANY AND THE SALFORD CORPORATION.—

at present pending in which the Manchester Ship Canal ek to restrain the Salford Corporation from alleged trespass of the Company. A wharf has been built on the canal at ntended that the new sewage sludge steamer shall load. ation are now laying pipes through the land between the s and the canal, and through these pipes it is proposed to dge to the wharf. The laying of the pipes constitutes the ass of which the Ship Canal Company complain. A ques- arise, now or later, as to the right of the Canal Com- ge toll to the Corporation for the use of the canal by in going to and from the wharf and Eastham. Mr. d Mr. Astbury are counsel for the plaintiff Company, and Corporation is represented by Mr. Sutton. At the hearing ery Court of the County Palatine of Lancaster on Wednes- e-Chancellor gave judgment against the Corporation, who ed.

EXPORTS OF ALKALI AND BLEACH.

THE following figures, which are taken from the official foreign and colonial statistics of the United Kingdom, give the amount and value of alkali and bleaching materials shipped to the undermentioned countries during the month of January, 1895, as compared with the same month in 1894 :—

Port.	ALKALI.			
	1894.	1895.	1894.	1895.
	Cwts.	Cwts.	£	£
Russia	7,978	3,977	3,303	1,492
Sweden and Norway	4,481	8,284	1,268	2,052
Germany	5,619	3,665	2,267	1,277
Holland	4,237	10,526	1,244	1,228
France	2,209	1,874	919	642
Spain and Canaries	30,958	20,825	14,268	7,113
Italy	17,782	21,098	6,849	6,275
United States	300,542	319,317	76,427	67,898
Australasia	14,265	9,910	5,869	3,429
British North America ..	10,685	4,175	3,193	1,191
Other countries	85,056	96,854	30,256	27,771
Total	483,812	500,505	145,863	120,368

BLEACHING POWDER, ETC.

Port.	1894.	1895.	1894.	1895.
	Cwts.	Cwts.	£	£
United States	65,102	68,919	26,353	25,357
Other countries	29,205	24,334	11,383	8,917
Total	94,307	93,253	37,736	34,274

Trade Notes.

ARTIFICIAL RUBIES.—The artificial rubies made in Paris a few years ago were regarded as scientific curiosities. It is stated that stones are now being largely sold in London and elsewhere which while closely resembling in all essential respects the rubies of Burmah, are undoubtedly of artificial origin. Tried for hardness, specific gravity, lustre, and subjected to all the tests which are usually applied to precious stones, they cannot be distinguished from the natural ruby. They are actually crystallised red alumina, only differing from the natural ruby in the process by which they have been produced. Examined with the microscope they betray their origin by the glassy enclosures which they contain and sometimes by a streaky appearance. In this connection, the late M. Edmund Fremy, was one of the first successful investigators.—(*C. T. J.* 400 p 43).

MECHANICAL REFRIGERATION IN 1894.—The progress made during the past year in the application of mechanical refrigeration to industrial purposes has been very remarkable. The Linde British Refrigerating Company, Limited, of 35, Queen Victoria-street, London, E.C., inform us that up to the end of 1894, 2,300 machines have been manufactured and supplied to customers, and all fully paid for, an unprecedented mark of appreciation of the Linde system by the trade. No less than 235 of these machines were manufactured, supplied, and paid for during 1894, or nearly half the number supplied by the leading firms manufacturing refrigerating machines in America from 1885 to 1895, and the greater part of these plants are for use in British territory or on board ships built in this country. A noticeable feature is the size of the machines supplied, particularly for marine use. Until recently the refrigerated holds were usually of a comparatively small capacity, but during last year three installations, each of a capacity of over 100,000 carcasses of sheep, have been fitted on board the *Perthshire*, *Buteshire* and *Banffshire*, and these vessels have been so strikingly successful that exact duplicates of the refrigerating machines have been adopted for the two new vessels for the New Zealand Shipping Company. These installations are by far the largest of any on board ship, and indeed are much above the average size of a land installation. A considerable number of other vessels have also been fitted with Linde machines, notably the *Warrimoo*, now running in the new Canadian and Australian service; the Emperor of Germany's yacht *Hohenzollern*, and several vessels of the British and Colonial Steam Navigation Company, North German Lloyd's, and several other leading lines. There are now over 250 of these machines at work on board ships, the majority of them being of large size. It will be interesting for the trade to learn that the excitement created some little time ago in certain quarters regarding the thawing of meat can be performed, (and those who understand refrigeration can easily fulfil the conditions) by the simple process of the Linde system without any elaboration and costly plants as proposed by the promoters.

IMPROVEMENTS IN ELECTRO-CHEMICAL DECOMPOSITION.—Some improvements relating to the methods of dealing with the products set free in the electrolysis of salt solutions have been devised by the Compagnie Electro-Chimique de St. Beson. The chlorine and the soda solution being brought together outside the electrolytic apparatus, are employed in the manufacture of hypochlorite of sodium, or else the chlorine being given off is converted into various useful derivatives, while the caustic soda is dealt with separately. In the latter case the soda is mixed with litharge in a digester, mechanically agitated and heated; the hot solution is then carbonated, with the result that insoluble white lead is precipitated, and afterwards separated off by means of a filter press. The alkaline liquid is further carbonated for the production of insoluble bicarbonate in solution of sodium chloride, the mother liquor being afterwards returned to the electrolyser.

"BRITISH AND COLONIAL DRUGGIST."—The shareholders of this company met together on Monday evening, at the Mosley Hotel, Manchester, to spend a social evening. Songs were given by Messrs. Barnes, Dickson, Whitham, and Summers; Mr. J. Price-Brown (banjo) and Mr. Cunningham (piano) also rendered good assistance with a couple of solos, and Mr. R. Duttie gave several humorous recitations in his well-known style; while Mr. W. H. Murphy, with a couple of banjo songs, was very successful. Mr. J. F. Cantwell (managing director), in a few well-chosen words, spoke of the progress the paper had made in the last few years, and as this was the first meeting of the shareholders in Manchester, Liverpool, and district, he was highly delighted to see such a large gathering, many having come a long distance in order to be present. After Messrs. Lane, Thompson, and Kemp had spoken, the programme was gone through, and a most enjoyable and successful evening was spent.

THE BOLTON SEWAGE SCHEME.—Last week a special meeting of the Bolton Town Council was held to consider the proposed extension of the Corporation sewage works, rendered necessary by the action of the Mersey and Irwell Joint Committee with reference to the pollution of rivers. Various suggestions for dealing with the sewage have been considered by the Corporation, but in view of the Local Government Board's refusal to lend money for the treatment of sewage otherwise than on land, it was decided to acquire a site for the purpose. Rhodes Farm, Clifton, the property of the Earl of Derby, was looked upon as a suitable site for the purpose. The price asked for the farm by his Lordship was £200. per acre, and the special meeting of the Council was called to decide as to the advisability of purchasing the estate. It was pointed out that the cost of carrying out the scheme would involve an expenditure of £75,000., but that there would be sufficient land included in the purchase to serve the borough for many years to come. One speaker expressed the opinion that they were asked £100. per acre too much for the land, whilst another contended that, as compared with the present price of agricultural land, they were being asked ten times too much. After a lengthy sitting, the Corporation decided by a large majority to purchase Rhodes Farm and to proceed with the scheme.

Market Reports.

TAR AND AMMONIA PRODUCTS.

There is a firmer tone in benzols, owing to the increased demand for enrichment and other purposes, and 90's and 90/90's are now worth 1 1/4d. Carbolic acid generally is weak. Though 60% crude is nominally quoted at 8s. 8d., there are sellers willing to accept 1s. 6 1/2d. to 2s. 7d. Crystals, 40%, are weak, and in very poor demand. Naphthalene is unaltered in price and quiet. Anthracene is steady at 2s. 2d. for 90% A, and 10 1/2d. 30% B. Pitch is unaltered for spot, but forward is slightly firmer at 33s. 6d., f.o.b. East Coast.

Sulphate of ammonia is rather quieter, owing to a temporary cessation of demand. Dealers have covered for the moment, and owing to the backwardness of the season, consumers' orders are delayed. Prices, however, remain steady at:—Bockton £11. 7s. 6d., London outside makes £11. 7s. 6d., Liverpool £11. 7s. 6d., Hull £11. 9s. to £11. 7s. 6d., and Leith £11. 3s. 9d. to £11. 5s., all prompt. Nitrate dull.

MISCELLANEOUS CHEMICAL MARKET.

Business, generally, in the alkali trade is fairly active. There is a good demand for export both in bleaching powder and caustic soda, and prices are steady. Current quotations for caustic soda are:—*White Liverpool*, 77%, £6. 15s.; 74%, £6. 15s.; 70%, £7. 15s.; 60%, £6. 15s.; *Green*, 60%, £6. 10s. net per ton, 20-ton lots and upwards. *Alumina* dull, 9%, £3 to £3. 2s. 6d. per ton, bags, on rails *coldest* *white*. *Bleaching powder*, £7. 2s. 6d. to £7. 5s. f.o.b., and

£7. 5s. f.o.b., hardwoods. Soda crystals still depressed, and at 37s. 6d., bags, makers' works. Bicarbonate of soda still immunity from excessive competition, and value is, therefore, maintained at £6. 10s. to £6. 12s. 6d. per ton f.o.b. The price of sulphur is without improvement at £3. 12s. 6d. to £3. 15s. per Chlorate of potash weak at 4 1/2d. per lb. Chlorate of soda, 1 per lb. Sulphate of copper steady at £15. 10s. to £15. 12s. Acetates of lime are without any change in position, meantime in common with all other acids and acetic acid, extremely depressed value. White powdered arsenic is still scarce at £14. 10s. per For potash, caustic and carbonate, there is a fairly active demand, rather a firmer market. Borax and boracic acid are still offering low rates. Prussiate of potash, 9 1/2d. to 9 3/4d. Prussiate of 7 1/2d. Carbolic acids in all grades are neglected, and price slightly easier. Nitrate of soda, 8s. 9d. to 9s. per cwt., according quality. The remarkably low level of values in the whole range of chemical products is indicative of the general quietness of throughout the country.

REPORT ON MANURE MATERIAL.

There has been more doing during the week, mostly for prompt early delivery, but prices do not indicate much alteration in Florida phosphate rock, 75/80%, is quoted 7 1/4d. per unit; Fence rock, 60/65%, 6 1/4d. per unit; South Carolina River rock, 55/60%, 6 1/4d. per unit; and Algerian, 55/60%, 6 1/4d. per unit, in c. f. and i. to good United Kingdom ports, 1895 steamer shipment, these prices are probably 1/4d. per unit above actual market at River Plate bones still hang fire, and cargoes afloat or near it are hardly worth more than £4. 2s. 6d. per ton. Sales of Kurrachee bones have been made from quay at £4. 7s. 6d. per and this is asking price for shipment, but buyers don't respond. The value of Bombay bone meal on spot is about £4. 7s. 6d. per supplies being scarce, but for shipment £4. 3s. 9d. would do. Com grinding bones are neglected, and good clean parcels would not fetch over £4. per ton. Nitrate of soda is fairly steady on spot, with quality at 8s. 9d. per cwt., good at 9s., and renetted at 9s. 1 1/2d. per. Arrived at port of call cargoes are worth 8s. 7 1/2d. to 8s. 8d. per and due cargoes about 8s. 6d. Home-prepared dried blood off 10s. per unit, single bags, f.o.r. at works, and in doubles at 10s. f.o.b. Liverpool.

LIVERPOOL MINERAL MARKET.

Our market this week has maintained its briskness, and the is somewhat stronger. Manganese imports are nil, whilst stocks being constantly reduced; prices continue firmer. Ground manganese The demand continues good, and prices are steady at £6. 1s. 1 and £12. 10s., according to quality. Manganiferous iron ore required for rather more, and business is being done at 16s. to 17s. per ton, c.i.f., in cargoes. Bauxite, Irish Hill brand, continues with an increased demand for the manufacture of aluminium, sulphate of alumina, etc., and prices are steady at 30s. for first quality, 18 seconds, and 12s. for thirds, f.o.b. Chrome ore: The arrivals week have been under 100 tons, with an increasing strong demand prices are firm at 70s. per ton for 40% and 115s. for 50% ore. Fl chalk: The arrivals have fallen off somewhat, whilst stocks are much reduced; prices are firm at 70s., 80s., 90s., and 110s. per according to quality, for "Angel White" and "Gold Medal" is Wolfram and scheelite continue steady, with a little more in Tungsten metal 2s. 3d. per lb. Ferro-tungsten 2s. per lb. Map 35s. to 40s. per ton, in cargoes; small quantities from stock, 40s. in raw ground, £6 per ton; calcined ground, £10. 10s. to £12. 10s. per according to quantity. Pyrambo continues in brisk demand at £6. per ton for founders' purposes, and better grades at £8. to £10. per Arsenic continues very scarce at £15. 10s. to £17. per ton. B earth continues steady, with good inquiry. Ochres, steady: F J.C., 60s. per ton; other brands according to quality.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron, steady: Scotch warran at 41s. 8d., Middlesbrough 34s. 2 1/2d. cash, and hematite 42s. Copper, steady: Chili bars, G. O. B.'s and G. M. B.'s, close £38. 17s. 6d. to £39. 2s. 6d. cash, and £39. 5s. to £39. 10s. months. Tin, firmer: Straits closed at £60. to £60. 10s. cash £60. 7s. 6d. to £60. 17s. 6d. three months; Australian, £60. 3s.; English, £61. 10s. Lead, steady: Spanish, £9. 11s. 3d.; English, 12s. 6d. Silesian spelter: ordinary, £13. 12s. 6d. Nickel, 15.

7, £32. Quicksilver: first hands, £6. 10s.; second hands, 1. Copper shares, steady: Cape, $1\frac{3}{8}$ to $1\frac{1}{2}$; Copiapo, $1\frac{1}{2}$ Libiola, $3\frac{1}{4}$ to $3\frac{1}{2}$; Mason and Barry, $1\frac{3}{8}$ to $1\frac{7}{8}$; Rio $\frac{11}{16}$ to $12\frac{1}{16}$; Tharsis, $4\frac{3}{8}$ to $4\frac{5}{8}$.

GOW, WEDNESDAY.—Market steady, with small business, one at 41s. 8½d. cash; closing with buyers at 41s. 8d. cash, k 41s. 8½d. Cleveland done at 34s. 3d. cash; closing with 34s. 2½d. cash, sellers ask 34s. 3½d. Cumberland hematite h buyers at 42s. 5d. cash, sellers ask 42s. 6d. Middlesbrough closes with buyers at 41s. 6d. cash, sellers ask 41s. 9d.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

—Palm oil is easier in price and position, the demand being . Olive is pretty well inquired for, and considerable sales at have been made. Linseed is quiet, but holders are steady at 2s. per cwt., in export casks. Cottonseed is rather dull, but continue without change at 17s. 9d. to 18s. 3d. per cwt. for refined. Castor oil is slow of sale, and good seconds has been done at 2½d. First pressure French is quoted 2d. per lb. Tallow continues quiet at good prices. Resin keeps : Common has been done at 4s. 6d. per cwt., and there is a d inquiry even at this price. There has been considerable n spirits of turpentine, and owing to reported advance in prices are now very firm at 23s. 3d. to 23s. 6d. per cwt. n is strong in price, with a good demand: quotations are 6½d. for American, according to quality, and 4¾d. to 4½d. for Russian refined.

URS are steady, without alteration in prices. Oxfordshire, common, £10., medium, £12., best, £15., re, common, 40s.; medium, 50s., best, 60s.; Welsh, best, onds, 50s., and common, 18s.; Irish, Devonshire, 40s. to ench, J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Umber: quiet; Devonshire, 50s. to 55s. White lead, £16. Red lead d. Venetian red, £6. to £10. Cobalt: Prepared oxide, black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2, Oxide of iron: Common, £7.; medium, £10.; finest, £20. e, £22. 10s. to £25.

THE COPPER MARKET.

Harrington and Co., in their fortnightly report, dated 1, March 1st, 1895, state:—

Charters for the second half of February are advised as 450 tons, 100 tons for the previous fortnight, making 1,550 tons for h. The quantity same time last year was 1,950 tons. Ex- 6¾d. Since our last the market for G.m.b.'s has had a ecline in sympathy with another drop in America, and business rom £39. 11s. 3d. cash and £39. 18s. 9d. three months, down 8s. 9d. and £39. 6s. 3d. respectively, closing firmer to-day yers at £39. 2s. 6d. cash and £39. 10s. three months. l stocks in Liverpool, Swansea, London, and Havre are ns, against 51,914 tons on the 18th ult., showing an decrease ns for the fortnight, but with an increase for the previous of 866 tons, makes an increase for the month of 392 tons. The clude about 2,000 tons of copper sold, but not yet delivered rs.

sible supply for the fortnight is 55,228 tons, against 55,765 the 18th ult., showing a decrease of 537 tons. The figures show an increase of 315 tons. Refined and ured sorts are steady. Quotations being:—Toughcake, £42. 5s.; best select, £42. 10s. to £43.; Indian sheets, £47.; eets, £50., and yellow metal sheets, 4½d. per lb. There are f furnace material to report.

TYNE CHEMICAL REPORT.

TUESDAY.

als are quiet, and there is very little new demand. 76/77% still scarce, at £9. 10s. per ton, and sulphur, owing to in price of Sicilian, is now quoted at £4. to £4. 5s. per ton. ducts unaltered.

ing Powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, astic soda, 76/77%, £9. 10s. per ton, nett; do., 70%, £8. nett; recovered sulphur, 2 cwt. bags, £4. 5s. per ton, nett; , 48%, £3. 15s. per ton, nett; do., 52%, £4. 2s. 6d. nett; do., 56%, £4. 10s. per ton, nett; alkali, 36%, £2. 15s. nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. on, nett; do., 52%, £5. 5s. per ton, nett; hyposulphite of

soda, 5-7 cwt. casks, £5. 15s. per ton, nett; do., 1 cwt. kegs, £6. 7s. 6d. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £1. 16s. 6d. per ton, nett, gross weight; do., 2 cwt. bags, £1. 16s. 6d. per ton, nett; chlorate of potash, 5½d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £4. 2s. 6d. per ton, nett; blanc fixe, £7. 10s. per ton, nett; chloride of barium, £7. 10s. per ton, nett; carbonate of alumina, £28. 15s. per ton, nett; aluminate of soda, £33. 15s. per ton, nett; in 5 ton lots, £28. 10s. per ton, nett.

SALT.—South Durham salt quiet, at 9s. to 9s. 6d. per ton, f.o.b. Tees.

COALS.—There is a better feeling in the market, and, as there is an uncertainty as to the production in South Wales, collieries here are firmer in their prices. Coal, however, is still plentiful. Quotations to-day are as under: Best Northumbrian steam, 8s. 9d. to 9s. per ton; second qualities, 7s. 9d. to 8s. per ton; small steam, 3s. to 3s. 3d. per ton; gas coals, in good demand, 6s. 9d. to 7s. 3d. per ton. Coke quiet, 13s. to 13s. 6d. per ton.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—In spite of the continued scarcity of supplies of seed the value for oil continues to recede. The following is a return of the stocks of seed in Hull at the end of each of the past two months:— Linseed, ending Feb., 2,202 qrs.; ending Jan., 16,905 qrs. Rapeseed, ending Feb., 10,223 qrs.; ending Jan., 13,033 qrs. Cottonseed, ending Feb., 2,889 tons; ending Jan., 3,234 tons. The imports of seed have been—Linseed, month ending Feb., 19,970 qrs, against, ending Jan., 29,291 qrs. Rapeseed, ending Feb., 2,636 qrs, against, ending Jan., 17,246 qrs. Cottonseed, ending Feb., 18,983 tons, against, ending Jan., 32,391 tons. Linseed oil has again declined 5s. per ton, closing flat at 19s. 9d., naked, spot; March-April, 18s. 9d.; May-Aug. offer at 18s.; and Sept.-Dec. at 17s. 9d. Boiled and refined from £1. to £2. per ton extra. Export for the week, 640 cwt. Refined cotton oil quiet, at 15s. 9d., naked, spot; May-April, 16s.; and May-Aug., 16s. 6d. Crude, on the spot, offers at 14s. 3d., naked; casks 17s. 6d., and barrels 25s. per ton extra. Export of refined for the week, 6,060 cwt. Castor oil, 2½d. per lb. for first pressure Smyrna. Olive oil, £32. per tun. Cod oil, £16. to £18. per ton. Sod oil, for curriers, etc., £15. to £22. per ton. Boiled drying oil, £12. per ton. Soft soap, 14s. 6d. per cwt.

CAKES.—Linseed cakes firm: 95%, pure, £7. 2s. 6d.; Russians, £6. 2s. 6d. to £6. 12s. 6d.; oilcakes, £5. 12s. 6d. to £5. 17s. 6d.; Cotton cakes steady: best makes, £3. 10s. to £3. 12s. 6d. per ton; seconds, £3. 7s. 6d. Rape cakes unaltered.

PAINTS.—The situation is slowly improving. Some of the firms who have been running short time during the year are again employing their hands full time. Prices are: Ready-mixed paints, in lever tins, from £25. per ton. Washable distemper colours, ground in water, varied colours, from £24. per ton. White and red lead unchanged. Venetian red, oxide of iron, black, blue, green, and yellow ochre paints, from £12. per ton. Paint remover, 25s. to 30s. per cwt. Ultramarines, dry, from 3d. to 8d. per lb. Lime blue, £16. per ton. Imperial black varnish, £5. 10s. per ton, in barrels.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

The course of sulphate of ammonia during the week has been somewhat deceptive, the article at one time seeming as if promising generously, and in the event performing but moderately. For Glasgow delivery two parcels, at least, fetched £11. 10s., but these, it turned out, were lots of special quality. On the whole, however, there has been some slight *bona fide* gain, and the figures to-day are a good £11. 5s. for Leith delivery, and £11. 7s. 6d. for Glasgow.

As yet there is manifest no undeniable improvement in the position of general chemicals but rather, perhaps, an increased feebleness, owing partly to the modified renewal of frost and general hard weather. Bleaching powder, caustic soda, and chlorate of potash are all fractionally easier.

As regards mineral oils and solid paraffins, there is nothing definite as yet to announce, except a continuation of the very great uncertainty hanging over the promised "corner" in the latter by the Standard Oil Company and the Scotch Companies combined. Rumours, chiefly of the dismal sort, are plentiful, and yesterday there was not even a single transaction in "oils" on the Glasgow Stock Exchange. Below, the old product prices are still adhered to.

Chief prices current are:—Soda crystals, 35s. nett, Tyne; soda ash, 48/52°, £3. 15s. to £4. 5s. nett, Tyne; white alkali, 48/52°, £4. 10s. to £5. 5s. nett, Tyne; alum in lump, £5. 10s. nett,

Cyprus, 1,362 Italy, 100 Tanner's Bark E. Indies, 2 bgs. Durban, 23 t.	Dunlop Bros. & Co. J. Graves Beresford & Co. Dyster, Nalder & Co. Beresford & Co.	Rosin— U. States, 100 brls. Lucas & Spencer's Wf., Ltd.	Boston, 3 pkgs. G. W. Antwerp, 2 brls. Wheatley J. T. Fletcher & Co.	Antwerp, 433 172 10 cks. J. T. Fletcher & Co.
Adelaide, 3 E. Indies, 88 bgs. " 250	Lewis & Peat Cayzer, Irvine & Co.	Saltpetre — Germany, 4 cks. " 127 110 kgs. Petri Bros. E. Indies, 103 bgs. P. Hecker & Co. Devitt & Hett	Cottonseed Oil — New York, 255 brls. Norfolk, 500 Cream of Tartar — Marseilles, 5 brls.	Stearine — Antwerp, 76 bgs. New York, 43 hds. Co-op. W'sale Society, Ltd.
Valonia Greece, 2 t. A. Turkey, 99 " 50 " 55 Dyestuffs (otherwise undescribed) Germany, 100 bgs. L. & I. D. Jt. Co.	J. Graves J. Knill & Co. A. & W. Nesbitt Hicks, Nash, & Co. Hoare, Wilson, & Co.	Sodium Acetate — France, 21 cks. J. Burnett & Sons Sodium Phosphate — Germany, 6 cks. Kirkpatrick & Co.	Dried Blood — Campana, 213 bgs. Dyestuffs — Extracts Marseilles, 150 brls. New York, 15 W. Bingham Bordeaux, 250 cks. New York, 75 Antwerp, 20 Fustic Savannah, 393 logs G. H. Muller & Co. Carthagena, 406 Leech, Harrison & Co.	Tallow — Havre, 72 cks. Cunard S. S. Co., Ltd.
Farina — Germany, 100 pkgs. E. & T. Pink Singapore, 761 Adamson, Gillfillan, & Co.	E. & T. Pink Adamson, Gillfillan, & Co.	Starch — Belgium, 150 pkgs. Leach & Co. " 148 T. H. Lee " 400 Sawyer, Sons, & Co. " 140 F. Clayton & Co. France, 150 E. & T. Pink Holland, 30 L. & I. D. Jt. Co.	Indigo Calcutta, 278 chts. Logwood Kingston, 460 t. Myrabolams Bombay, 1,745 bgs. A. Ewart & Co. " 1,180 Bombay, 870 E. D. Sassoon & Co.	Tartar — Bordeaux, 17 cks. Tartaric Acid — Rotterdam, 3 cks. 1 cs. Treacle and Molasses — New York, 1,200 brls. Stettin, 202 Turpentine — Savannah, 350 brls. Waste Salt — Dunkirk, 102 bgs. White Lead — Antwerp, 17 brls. 10 cks.
Glucose — Germany, 500 pkgs. 500 c. " 15 93 c. M. D. Co. Holland, 103 100 J. Barber & Co. France, 150 150 Barrett, Tagant, & Co.	M. D. Co. J. Barber & Co. Barrett, Tagant, & Co.	Sulphur — Italy, 10 t. R. Waters " 5 J. Knill & Co. " 5 W. J. Crook " 250 W. C. Bacon & Co.	Orchella Valparaiso, 53 bls. Frankeffurter & Lichermand Lisbon, 30 bgs. Saffron Alicante, 1 cs. Valonia Hamburg, 1 bg. Constantinople, 478 C. Nicolaides " 575	Wood Pulp — Halmstad, 5,241 bls. Rotterdam, 99 Zinc Oxide — New York, 50 brls. Antwerp, 30
U. States, 1,000 1,000 " 400 1,000 " 200 200 " 10,299 13,853 " 500 500 " 500 500 " 500 500 " 25 152	Ohlenschlager Brs. L. & I. D. Jt. Co. L. Sutro & Co. R. G. Hall & Co. Hoare, Wilson, & Co. Beck & Pollitzer G. Clark & Son Fuerst Brs.	Talc — Italy, 450 A. H. Smith Ultramarine — Belgium, 8 pkgs. W. Harrison & Co. Germany, 3 cs. H. Brooks & Co.	Glucose — New York, 500 brls. Dunkirk, 200 bgs. Guanine — B. Ayres, 1,824 bgs. Williamson Milligan	MANCHESTER. <i>Week ending February 23rd.</i> Arachide Oil — Rotterdam, 10 cks. Carbonic Acid — Rotterdam, 12 tubes. Chemicals (otherwise undescribed) Rotterdam, 21 cks. Colours — Rotterdam, 97 cks. 82 cs. Trepport, 5 1 Arnati & Harrison
Guanine — Sydney, 20 t. Houlder Brs. & Co. Manganese Ore — N. Zealand, 2 t. Fisher, Renwick, & Co.	Houlder Brs. & Co. Fisher, Renwick, & Co.	Yarnish — France, 28 pkgs. Flageollet & Co. White Lead — Holland, 4 cks. A. Zumbek & Co.	Lamp Black — New York, 7 brls. B. R. Vickers & Sons	Dyestuffs — Extract Trepport, 2 cks. Arnati & Harrison
Manure — France, 260 t. J. Burnett & Sons Belgium, 10 A. Zumbek & Co. N. Zealand, 5 L. & I. D. Jt. Co.	J. Burnett & Sons A. Zumbek & Co. L. & I. D. Jt. Co.	Wood Pulp — Sweden, 260 bls. Henderson, Craig, & Co. " 203 W. G. Taylor & Co. " 16 pkgs. Johnson & Jorgenson Norway, 221 W. G. Taylor & Co. " 750 bls. W. E. Bott & Co. " 200 Becker & Ulrich Canada, 3,361 E. J. & W. Goldsmith Belgium, 77 pkgs. Horton Kirby Paper Co.	Mica — New York, 15 brls. T. Robinson & Sons	Ochre — Rotterdam, 50 bgs. Pitch — Rotterdam, 70 brls. Potash — Rotterdam, 5 cks. Sodium Acetate — Trepport, 15 cks. Arnati & Harrison
Mica — E. Indies, 411 F. Claydon & Co. U. States, 200 Magee, Taylor, & Co.	F. Claydon & Co. Magee, Taylor, & Co.	LIVERPOOL. <i>Week ending February 21st.</i> Acetate of Lime — New York, 800 bgs. Rouen, 157 Co-op. W'sale Society, Ltd. New York, 689 M. S. Canal Co.	Ochre — Alicante, 50 brls. Marseilles, 35 Rouen, 100 cks. Co-op. W'sale Society, Ltd.	Tartaric Acid — Rotterdam, 8 cks.
Molasses — U. States, 100 pkgs. 559 c. Deering & Robottom " 1,500 8,000 Chmbln.'s Wf.	Deering & Robottom Prop. Chmbln.'s Wf.	Acetic Acid — Bordeaux, 3 cs. Antimony — Havre, 8 cs. Cunard S. S. Co., Ltd. Valparaiso, 150 sks. Asbestos — Boston, 1,000 bgs. Fairker, Ashford & Co.	Paint — Boston, 21 cs. J. Waters Paraffin Scale — New York, 1,506 brls. Thompson & Bedford	Wood Pulp — Christiania, 2,600 bls. C. Christopher- son & Co. Rotterdam, 148 Gothenburg, 2,113 Sannesund, 7,046 27 fthms.
Naphtha — France, 81 cks. Burt, Boulton, & Co. Belgium, 46 Forbes, Abbot, & Co.	Burt, Boulton, & Co. Forbes, Abbot, & Co.	Barytes — Antwerp, 50 bgs. Borax — Hamburg, 15 bgs. Brown, Geveke & Co.	Phosphate — Ghent, 1,250 bgs. Phosphate Rock — Ghent, 2,800 bgs. R. Silcock Fernandina, 1,355 t.	HULL. <i>Week ending February 23rd.</i> Acetic Acid — Rotterdam, 30 blms. W. & C. L. Ringrose
Ochre — France, 2 cks. J. Lyon & Co. Paraffin Wax — Rangoon, 805 cs. H. Hill & Sons U. States, 248 pkgs. 7,242 brls. Anglo- American Oil Co. " 215 brls. G. H. Frank	J. Lyon & Co. H. Hill & Sons Anglo- American Oil Co. G. H. Frank	Camphor — Hamburg, 1 ck. Candles — Antwerp, 10 bxs. 32 crts. Marseilles, 10 cs. Lampert & Holt	Pitch — Marseilles, 24 brls. Hamburg, 59 cks. Potash — Dunkirk, 54 dms. Pyrites — Huelva, 6,622 t. Matheson & Co. Quicksilver — Gijon, 74 flasks. A. Ruffer & Son	Acid — Hamburg, 8 cks. Wilson, Sons, & Co., Ltd. Antwerp, 2 19 pkgs. " Albumen — Hamburg, 4 cks. Wilson, Sons, & Co., Ltd.
Phosphate of Lime — France, 220 t. A. Hunter & Co.	A. Hunter & Co.	Caoutchouc — Havre, 232 pkgs. 36 sks. Cunard S. S. Co., Ltd. Valparaiso, 6 bls. Kleinwort, Sons & Co.	Rosin — New York, 600 brls. Thompson & Bedford Savannah, 4,273 New York, 500 Bordeaux, 3 cks. Saltpetre — Hamburg, 5 cks. 30 kgs. Soap — Marseilles, 50 bxs. New York, 50 cs. R. Cooks & Co. N. Orleans, 1,897 bxs.	Aniline — Hamburg, 10 cks. Wilson, Sons, & Co., Ltd. Barytes — Rotterdam, 11 cks. W. & C. L. Ringrose Bremen, 36 G. Holmes & Co. " 23
Pitch — U. States, 32 cks. T. Simpson	T. Simpson	Carbon Black — Boston, 2 brls. Castor Oil — Marseilles, 397 brls. Calcutta, 460 cs. Ralli Brs. " 746 Chrome Ore — New York, 6 bxs. Sanderson Brs. & Co.	Starch — New York, 100 bgs. Ghent, 30 cs. J. T. Fletcher & Co. Rotterdam, 160 Amsterdam, 10	Bone Meal — Kurrachee, 3,000 bgs. Bombay, 2 000 Camphor — Hamburg, 3 brls. Wilson, Sons, & Co., Ltd. Candles — Hamburg, 3 cs. Wilson, Sons & Co., Ltd.
Plumbago — Ceylon, 70 brls. Doultan & Co. " 97 R. G. Hall & Co. " 79 Cayzer, Irvine, & Co. " 100 Leach & Co. Germany, 10 cks. Acton & Bormann " 12 B. Gallaway	Doultan & Co. R. G. Hall & Co. Cayzer, Irvine, & Co. Leach & Co. Acton & Bormann B. Gallaway	Cod Oil — Hamburg, 30 cks. 40 brls. Colours — Hamburg, 1 ck. 2 cs. Evans, Sons & Co. Stettin, 30 " 7		
Potassium Biocarbonate — Holland, 12 cks. Beresford & Co.	Beresford & Co.			
Potassium Carbonate — Holland, 40 cks. T. H. Lee Germany, 10 A. & M. Zimmer- mann	T. H. Lee A. & M. Zimmer- mann			
Potassium Sulphate — France, 8 cks. C. J. Langmead " 50 bgs. Petri Brs.	C. J. Langmead Petri Brs.			
Pumice Stone — Italy, 5 t. B. & N. Wvs Co. " 11 W. J. Davies & Sons	B. & N. Wvs Co. W. J. Davies & Sons			
Pyrites — Spain, 1,470 t. Anderson, Anderson, & Co.	Anderson, Anderson, & Co.			
Quicksilver — Italy, 500 brls. L. & I. D. Jt. Co. Spain, 5,000 N. M. Rothschild & Son	L. & I. D. Jt. Co. N. M. Rothschild & Son			

Chemicals (otherwise undescribed)
Hamburg, 28 cks. Wilson, Sons, & Co., Ld.
Bremen, 1 Veltmann & Co.
Dunkirk, 4 Todd & Son
2 42 pkgs Wilson, Sons, & Co., Ld.

Cod Oil—
Drontheim, 5 brls. Wilson, Sons, & Co., Ld.

Colours—
Rotterdam, 8 pkgs. 9 cs. 1 ck. Hutchinson & Son
" 79 W. & C. L. Ringrose

Ghent, 9 cks.
Antwerp, 28 Wilson, Sons, & Co., Ld.
Hamburg, 10 Sissons Bros. & Co.
Rotterdam, 3 pkgs. Wilson, Sons, & Co., Ld.

Creosote—
Hamburg, 1 cs. Wilson, Sons, & Co., Ld.

Dyestuffs—
Alizarine
Rotterdam, 17 cks. W. & C. L. Ringrose
" 10 brls. Hutchinson & Son

Argols
Bordeaux, 37 bgs.
Cutch
Hamburg, 2 bgs. Wilson, Sons, & Co., Ld.

Madder
Rotterdam, 1 ck. Hutchinson & Son

Myrabolams
Bombay, 2,024 bgs.

Farina—
Ghent, 536 cs. 22 bgs. 9 cks. Wilson, Sons, & Co., Ld.
Hamburg, 22 Bailey & Loetham

Guano—
Bergen, 269 bgs. Wilson, Sons, & Co., Ld.

Ochre—
Rouen, 10 cks.
Bergen, 1 cs.

Paint—
Ghent, 100 l. Wilson, Sons, & Co., Ld.

Phosphate—
Rotterdam, 12 brls. Hutchinson & Son

Potash—
Hamburg, 40 cs. Wilson, Sons, & Co., Ld.

Pyrites—
Hamburg, 2,520 t.

Quicksilver—
Hamburg, 23 brls. Wilson, Sons, & Co., Ld.

Soda—
Rotterdam, 1 brl. Hutchinson & Son

Starch—
Antwerp, 40 cs. W. Gilpott & Co.
Bremen, 1,471 Veltmann & Co.

Stearine—
Antwerp, 41 pkgs. Wilson, Sons, & Co., Ld.

Tartar—
Antwerp, 2 cks. Wilson, Sons, & Co., Ld.

Tartaric Acid—
Rotterdam, 4 cks. W. & C. L. Ringrose
Bordeaux, 1 cs. Rawson & Robinson

Turpentine—
Bordeaux, 13 cks. Rawson & Robinson

Waste Salt—
Hamburg, 102 bgs. Furley & Co.
" 213 A. E. Peacock
" 500 J. W. Hill
" 509

White Lead—
Rotterdam, 13 cks. Hutchinson & Son

Wolfram—
Hamburg, 10 cs. Wilson, Sons, & Co., Ld.

GLASGOW.

Week ending February 28th.

Acetate of Lime—
Philadelphia, 732 bgs.

Acetic Acid—
Rotterdam, 15 cks. J. Rankine & Son

Aniline—
Rotterdam, 3 bxs. 5 brls. J. Rankine & Son

Bone Meal—
Bombay, 15,126 bgs.

Castor Oil—
Marseilles, 50 cs. 75 brls.
Antwerp, 58 cks.

Chemicals (otherwise undescribed)
Rotterdam, 2 brls. J. Rankine & Son

Chrome Ore—
Gulf of Macri, 2,330 t. J. & J. White

Cobalt Ore—
Noumea, N.C., 355 t. Nickel Co.

Colours—
Rotterdam, 5 cs. J. Rankine & Son

"
Rotterdam, 16 pkgs.

Cottonseed Oil—
New York, 10 pkgs.

Cream of Tartar—
Marseilles, 10 cks.

Dyestuffs—
Alizarine
Rotterdam, 135 pkgs.
St. Nazaire, 500 cks.
Fiume, 578 brls.
Rouen, 10
New York, 1
Logwood
Jamaica, 497 t. 4 c.
Madder
Rotterdam, 4 cks. J. Rankine & Son
Marseilles, 9
Myrabolams
Bombay, 616 bgs.

Sumac
Palermo, 350 bgs.

French Chalk—
Fiume, 100 bgs. P. M'Intosh & Co.

Glucose—
Philadelphia, 300 brls.
Rotterdam, 12 cks. J. Rankine & Son

New York—
399 pkgs.

Ochre—
Bordeaux, 8 cks.

Phosphates—
Antwerp, 250 bgs.

Pumice Stone—
Messina, 7 cks.

Rosin—
Baltimore, 300 brls.
Savannah, 1,650 J. Parker
Charleston, 1,754 Rowley & Dick
New York, 1,133 1,101 pkgs.

Soap—
Philadelphia, 23 cs.
Fiume, 27
New York, 40 pkgs.

Sodium Salicylate—
Rotterdam, 1 cs. J. Rankine & Son

Sodium Sulphate—
Antwerp, 8 cks.

Starch—
Rotterdam, 16 cs. J. Rankine & Son
Fiume, 20 bgs. Wm. Stirling & Son

"
Amsterdam, 30
40 cs.

Sulphate of Barytes—
Antwerp, 400 bgs.

Sulphur—
Messina, 100 bgs. W. Buntin & Co.

"
255

Tallow—
New York, 70 tcs.

Tartar—
Bordeaux, 40 cks.

Treacle—
Philadelphia, 1,000 brls.
Charente, 8 qrs. 2 cs.

Turpentine—
Savannah, 1,500 brls. J. Parker
Charleston, 1,650 Rowley & Dick

Ultramarine—
Rotterdam, 5 cs. J. Rankine & Son

Yarnish—
New York, 3 pkgs.
Rouen, 12 cks.

Waste Salt—
Hamburg, 265 cks.

White Lead—
Rotterdam, 28 cs. 10 cks. J. Rankine & Son

Wood Pulp—
Christiania, 1,422 bls.

Zinc Oxide—
New York, 100 pkgs.

TYNE.

Week ending February 23rd.

Barytes—
Rotterdam, 38 cks. Tyne S. S. Co.

Cod Oil—
Trondhjem, 5 brls.

Colours—
Rotterdam, 1 cs. Tyne S. S.

Pyrites—
Huelva, 30 t. 8 cs.

Tartaric Acid—
Rotterdam, 4 cks. Tyne S. S.

Wood Pulp—
Laurvig, 300 bls.

Zinc Oxide—
Rotterdam, 3 cks. Tyne S. S.

GOOLE.

Week ending February 20th.

Albumen—
Ghent, 1 cs.

Alkali—
Hamburg, 5 cks.
Calais, 16

Barytes—
Antwerp, 200 bgs.

Caoutchouc—
Boulogne, 1 ck.

Colours—
Hamburg, 12 cks. 6 cs.

Copperas—
Hamburg, 1 ck.

Dyestuffs—
Extracts
Ghent, 70 cks.

Dyestuffs (otherwise undescribed)
Boulogne, 43 cks. 5 cs. 17 pkgs.
Ghent, 17 1 195

Plumbago—
Boulogne, 1 ck. 6 cs.

Potash—
Antwerp, 4 dms.

Potassium Chloride—
Rotterdam, 15 cks.

Saltpetre—
Rotterdam, 170 bgs.
Hamburg, 1 ck.

Sodium Silicate—
Rotterdam, 1 ck.

Starch—
Rotterdam, 10 cs.

GRIMSBY.

Week ending February 17th.

Albumen—
Hamburg, 5 cks.

Aniline Dyes—
Antwerp, 37 cks. 58 pkgs.

Caoutchouc—
Hamburg, 7 cs.

Chemicals (otherwise undescribed)
Rotterdam, 12 cks.
Hamburg, 11
Hamburg, 5 cs.

Colours—
Hamburg, 11 cks. 48 pkgs.
Antwerp, 6 6 58

Starch—
Antwerp, 18 cs.

EXPORTS OF CHEMICAL PRODUCTS

OF

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending February 27th.

Acids—
E. London, 5 kgs. £12
Bamford, 3 cs. 17
Cape Town, 1 dm. 5

Aluminous Cake—
Calcutta, 39 t. £150

Ammonium Carbonate—
Yokohama, 5 t. 13 c. £178
Hugo, 2 54
New York, 14 3 450
Dusseldorf, 3 90

Ammonium Chloride—
Shanghai, 72 kgs. £83

Ammonium Sulphate—
Ghent, 100 t. £1,200
Palermo, 20 bgs. 25

Amorphous Phosphorus—
Calcutta, 1 c. £20

Arsenic—
Wellington, 1 t. 18 c. £52

Barium Nitrate—
New York, 2 t. £37
Yokohama, 10 c. 11

Borax—
Adelaide, 2 t. 1 c. £83

Caustic Soda—
Natal, 1 t. 5 c. £64
E. London, 2 3
Cape Town, 6 3
Penang, 2 3

Chemicals (otherwise under.)—
Adelaide, 10 cs. £103
Yokohama, 10 c. 37
Bombay, 11 49
Calcutta, 5 14
Singapore, 1 2

Citric Acid—
Yokohama, 5 c.
Higo, 10
Cape Town, 1
Shanghai, 1 kg.
Genoa, 1 t. 8
Livorno, 5 cks.
Libau, 3 t. 15
Hamburg, 3
Bombay, 1 ck. 18
Calcutta, 1

Coal Products—
Antiline Dye
Calcutta, 1 cs.

racene		
prf, 517 cks.	£3,201	
il		
e, 48 cks.	£110	
am, 30 pns.	186	
ilic Acid		
na, 110 drs.	£250	
100	222	
es, 100 cks.	242	
ote		
e, 4 pkgs.	£23	
rk, 400 bls.	180	
en, 510 t.	£803	
1,150	2,078	
449	800	
abeth, 200 dms.	£6	
110	8	
is—		
ille, 10 t. 19 c.	£24	
Sulphate—		
ury, 1 t.	£16	
1	38	
es, 100	1,600	
5	75	
3	50	
of Tartar—		
ton, 18 c.	£52	
10	31	
5	18	
stants—		
10 cks.	£50	
1 dm. 1 cs.	7	
2 t. 1 c. 25 pkgs.	81	
3	8	
25		
3 c.	£30	
loric Acid—		
lon, 16 c.	£13	
osphite of Lime—		
rk, 5 c.	£93	
95 t.	£100	
50	530	
29	75	
11 c.		
acid—		
lon, 5 dms.	£12	
4 cs.	7	
oric Acid—		
rk, 18 c.	£91	
orus—		
5 cs.	£55	
102		
23	243	
9 c.		
3 c.	£16	
Crystals—		
6 cks.	£45	
Salts—		
15 t. 10 c.	£1,850	
um Carbonate—		
2 c.	£4	
um Chlorate—		
1 t.	£42	
um Cyanide—		
me, 3 c.	£21	
um Prussiate—		
1 t. 6 c.	£112	
re—		
4 t. 9 c.	£111	
4	110	
8	380	
15	23	
1	23	
1	15	
1	3	
1	30	
1	6	
lip—		
5 t. 17 c.	£138	
300 drs.	38	
5 c.	£4	
1	1	
14	3	
crystals—		
1 t. 10 c.	£4	
Bicarbonate—		
long, 3 c.	£1	
lon, 5	2	
re, 2	3	
Hypsulphite—		
e, 26 t. 16 c.	£150	
long, 5	3	
um Nitrate—		
rk, 5 t. 17 c.	£139	
lon, 50 kgs.	£19	
1 t. 10 c.	£23	

Sulphuric Acid—		
Penang, 8 t. 16 c.	£38	
E. London, 2 dms.	3	
Tartaric Acid—		
Wellington, 3 c.	£17	
New Plymouth, 3	15	
E. London, 1	2	
LIVERPOOL.		
<i>Week ending February 27th.</i>		
Albumen—		
Vera Cruz, 10 cks	4 c. 3 q. £5	
Alum—		
Bourgas, 1 t. 16 c.	£8	
Valparaiso, 4 13 1 q.	22	
Talcahuano, 2 6 3	11	
Toronto, 4 19 3	30	
Piræus, 1 9 2	9	
St. John, N.B., 3 9	16	
Galatz, 10 6	49	
Alexandria, 1 8	7	
Montreal, 10	70	
Melbourne, 2	14	
Alum Cake—		
Yokohama, 4 t. 1 c.	£10	
Alumina Sulphate—		
Calcutta, 479 bgs.	£162	
Aluminoferrie—		
Calcutta, 20 t. 16 c. 3 q.	£55	
Ammonium Carbonate—		
Valparaiso, 1 t. 5 c.	£40	
Havre, 1	33	
Marseilles, 14 1 q	24	
Ammonium Chloride—		
Calcutta, 5 t. 5 c.	£188	
Naples, 12	22	
Boston, 3 10 2 q.	115	
Ibrail, 9	17	
Samsoun, 4 1	8	
Patras, 3	5	
Barcelona, 2 17	100	
Galatz, 2 4	81	
Havre, 1 6	25	
Alexandria, 4	7	
Messina, 5 1	10	
Bombay, 1	44	
Trieste, 1 19 1	75	
Philadelphia, 38 11 2	1,002	
New York, 5 16	25	
Antwerp, 1	21	
Ammonium Sulphate—		
Venice, 10 t. 1 c. 3 q.	£114	
Las Palmas, 6 1 2	72	
Nantes, 20	250	
Valencia, 100 1 1	1,176	
Antimony—		
Bombay, 2 cks.		
Boston, 1		
Portland, M., 1		
Antimony Salts—		
Piræus, 4 c. 2 q.	£15	
Arsenic—		
Gothenburg, 2 t. 8 c.	£36	
Asbestos—		
Iquique, 1 cs.		
Manaos, 1		
Bleaching Powder—		
Ancona, 132 cks.		
Baltimore, 85		
Baltmore, 15 dms.		
Boston, 1,387		
B. Ayres, 10 brls. 17 bxs.		
Chalcis, 3		
East St. Louis, 10 35		
Genoa, 166		
Leghorn, 30		
M. Video, 10		
Messina, 13		
Montreal, 25 kgs.		
Naples, 203		
Newport News, 135 50 130 bxs.		
New York, 326 20		
Philadelphia, 408		
Piræus, 3		
Rangoon, 5		
San Sebastian, 29		
Alexandria, 6 20 kgs.		
Barcelona, 6		
Bari, 40		
Hamilton, 3		
Havana, 21		
Montreal, 62		
Boracic Acid—		
Hamburg, 5 t. 13 c. 3 q. £170		
Antwerp, 1 3	3	
Borax—		
Rotterdam, 3 t. 2 c. £65		
Piræus, 8 21		
Honolulu, 5	5	

Vera Cruz, 5 6		
Bombay, 5 5		
Antwerp, 5 3 3 q. 112		
Calcium Carbonate—		
Bussorah, 1 ck.	£6	
Candles—		
Algoa Bay, 215 cs.		
Bathurst, 24		
Bilbao, 2		
Bombay, 385		
Bonny, 25 bxs.		
Calcutta, 1,436		
Gibraltar, 100		
Larnaca, 6		
Las Palmas, 300		
Lisbon, 597		
Madras, 325		
Malta, 470		
Rabat, 700		
Rangoon, 525		
Sierra Leone, 35		
Talcahuano, 100		
Teneriffe, 125		
Valparaiso, 26		
Antofagasta, 100		
Larache, 156		
Mazagan, 500		
Seville, 21		
Carbolic Acid—		
Montreal, 18 c. £23		
Milan, 1 t. 52		
Newport News, 6 17 312		
Hamburg, 2 1 108		
M. Video, 2 2 8		
Castor Oil—		
Winnebah, 6 cs.		
Caustic Potash—		
New York, 1 c. £1		
Newport News, 5 t. 6 133		
Caustic Soda—		
Antwerp, 39 dms.		
Aracaju, 10		
Barcelona, 430 20 cks.		
Boca, 4		
Bombay, 12		
Boston, 295 50 brls.		
B. Ayres, 75		
Calcutta, 69		
Callao, 105		
Catania, 135		
Ceara, 30		
Dunkirk, 30		
Fiume, 81		
Galatz, 139		
Genoa, 364		
Hamburg, 5		
Havana, 60		
Hiogo, 625		
Ibrail, 70		
Iquique, 50		
Leghorn, 142		
Maceio, 5		
Malaga, 173 4 10		
Manaos, 10		
Mauritius, 6		
Messina, 25		
Naples, 158		
Newport News, 980 145 pkgs.		
New York, 1,060 60 kgs.		
Penang, 90		
Pernambuco, 5		
Philadelphia, 350 20 280 brls.		
Rangoon, 35		
Rio de Janeiro, 32		
Rotterdam, 23 107 pkgs.		
San Sebastian, 90		
Santos, 5		
Seville, 492		
Talcahuano, 25		
Valencia, 25		
Valparaiso, 50		
Victoria, 25		
Yokohama, 400 40 kgs.		
Alexandria, 40		
Alicante, 30		
Amsterdam, 69		
Ancona, 63		
Baltimore, 158		
Bari, 69		
Demerara, 2		
Matanzas, 10		
M. Video, 223		
Odessa, 100		
Piræus, 38		
Porto Alegre, 25		
Samarang, 8		
San Francisco, 300		
Sarragossa, 25		
Tocopilla, 9		
Vera Cruz, 28		
Victoria, B. C. 25		
Chemicals (otherwise undescribed)		
Rio de Janeiro, 3 pkgs. £48		
Bombay, 6 t. 15 c. 236		
Bagdad, 1 19 57		

Piræus, 6 11		
Genoa, 1 5 46		
Alexandria, 1 10 55		
Halifax, 10 18		
China Clay—		
Bombay, 329 t. 40 cks.		
Boston, 631		
Piræus, 147		
Rio de Janeiro, 23 24		
Chromic Acid—		
Hamburg, 2 c. £7		
Coal Products—		
Alizarine		
New York, 2 kgs. 2 cks.		
Aniline Colours		
Shanghai, 50 cs.		
Constantinople, 6		
Trebizonde, 2		
Aniline Oil		
Boston, 5 dms. 20 cs.		
Newport News, 8		
Vera Cruz, 3		
Aniline Salts		
Boston, 5 t. 2 c. 20 cs.		
Smyrna, 10 cks.		
Syria, 5 brls.		
New York, 20		
Creosote Oil		
Bordeaux, 48 brls.		
Naphthaline		
New York, 16 cks.		
Pitch		
Bathurst, 10 brls.		
Cette, 847 t.		
La Rochelle, 801		
Marseilles, 1,445		
Philadelphia, 10		
Bombay, 53		
Galatz, 25		
Tar		
Bombay, 9 brls.		
Ibrail, 10		
Lagos, 30		
Santander, 7 cks.		
Sierra Leone, 50 10 kgs.		
Accra, 20		
Galatz, 115		
Pt. Natal, 3 80 dms.		
Cobalt Oxide—		
Rotterdam, 2 c. £50		
Valencia, 3 q. £26		
Antwerp, 1 25		
Hamburg, 2 2 70		
Copperas—		
Aleppo, 3 t. 4 c. £6		
Rio de Janeiro, 2 8 8		
Kurrachee, 8 5 29		
Copper Sulphate—		
Catania, 10 t. 10 c. £162		
Palermo, 20 29		
Nantes, 28 2 q. 419		
Oporto, 7 16 119		
Lisbon, 10 2 153		
Paris, 20 4 308		
Leghorn, 62 3 2 647		
Messina, 11 4 3 169		
Galatz, 10 7 7		
Ancona, 12 7 2 178		
Santos, 10 8		
Genoa, 107 17 3 1,635		
Naples, 12 18 2 191		
Sydney, 1 15		
Vera Cruz, 19 19 1 319		
Valparaiso, 5 5 44		
Bordeaux, 93 10 2 1,393		
Marseilles, 20 1 1 301		
Venice, 42 10 1 601		
Disinfectants—		
Calcutta, 6 cks. £4		
M. Video, 3 c. 10		
Flux Skimmings—		
Bordeaux, 5 cks.		
Guano—		
Barcelona, 5 t. 5 c. 2 q. £23		
S. Cruz de Tenerife, 10 t. 34		
Gypsum—		
New York, 36 t. 6 c. £98		
Litharge—		
Santander, 3 brls.		
Magnesia—		
Rio de Janeiro, 20 cs.		
Tampico, 12		
Magnesium Chloride—		
Bombay, 4 t. £10		
Magnesium Citrate—		
Rio de Janeiro, 3 q. £8		
Magnesium Sulphate		
Honolulu, 22 cs.		
Paris, 10 brls.		
Bombay, 6 cks.		
Manganese Ore—		
E. London, 40 cks. 10 c.		
Rosario, 10 c.		

Manure—

Barcelona,	25 t.	5 c.	2 q.	£60
Genoa,	97	13	2	318
Bordeaux,	3	11		50
Las Palmas,	4	1		46
Gd. Canary,	4	11	1	52

Oxalic Acid—

Boston,	11 t.	2 c.	3 q.	£206
---------	-------	------	------	------

Paint—

Antwerp,		11 kgs.		
B. Ayres,	9 cks.			
Cadia,			40 dms.	
Calcutta,		480		
Cameroon,	2			
C. C. Castle,	2			
Ceara, 2 bdl.				
Galatz,	12			
Hamburg,	10			
Havana, 2 cs.				
Manila,	32	444	100	
Maracaibo,			240	
New York 2 cs.	31		75	
Opobo,			20	
Pernambuco,	2			
San Juan, 1 brl.		200		
Shanghai,		40		
Sulina,	8			
Talcahuano,			70 brls.	
Trinidad,	5			
Accra, 10 cs.				
Arecibo,	4			
Bakana,	4			
Batavia,		24		
Beyrout,	4			
Buenaventura,			10 cs.	
Elmina,			1	
Jaffa,	4			
La Guayra,	1			
Loango,		10		
Para,	18		1 dm.	
Pt. Natal,		6		
Pram Pram,		12	3 dms.	
Punta Arenas, 38				
Santiago de Cuba, 2				
Santos,		14		
St. Lucia, 1 cs.		26		
Trieste,	1			
Valparaiso,	2	70	56	
Winebush, 10			6	

Painters' Colours—

Akassa,	135 kgs.			
Bathurst,	45			
Bilbao,	12 cks.			
Boston,	89	155 brls.		
B. Ayres,	12			
Callao,		56		
Galatz,		340		
Genoa,				
Lisbon, 1 cs.			4	
Manila,	2			
Marseilles,		21		
New York,	3		236	
Parnahyba,		2		
Portland,	1			
Rotterdam,	4			
Sagua la Grande,		3		
Santiago,		9		
Trinidad,	3			
Alexandria 16 bds. 26		792	36	
Bahia,		16	1	
Bombay, 28 cs.		420	15	
Cabedello, 1			19	
Calcutta,	3			
Havana, 7 tcs. 15		48	57	
Kingston, Ja., 1		1		
Matanzas,				
M. Mideo, 10 cs.			3	
N. Orleans,			200	
Para, 14 tcs.		40	23	
Penang, 1 cs.				
Progresso,			5	

Paraffin Wax—

Odessa,	15 bgs.			
Patras,	8 c.			
Rio de Janeiro,	4 cs.			

Phosphorus—

Havana,	3 c.	£31		
Higo,	2 t.	10		410

Plumbago—

Rosario,	6 cks.			
Valparaiso,	14			

Potashes—

Alexandria,	1 t.	£20		
-------------	------	-----	--	--

Potassium Carbonate—

Newport News,	4 t.	1 c.	£78	
---------------	------	------	-----	--

Potassium Chlorate—

Hamburg,	16 c.	£29		
Naples,	1 t.	5		59
Kinston, Ja.,	1			47
Cape Town,	1			40
Bar,	1			53
Rio de Janeiro,	4			9
Boston,	5			288
Tampico,	2			6

Vera Cruz,		5	15	
Odessa,	1	1	49	
Higo,	15		791	
Yokohama,	3	10	198	
Kobe,	2	10	136	
Havana,	1		42	
New York,	24		1,220	
Rotterdam,	2		98	

Potassium Prussiate—

Bilbao,	8 c.	£32		
Alexandria,	2		10	
Bombay,	3		15	

Pumice Stone—

Bombay,	63 brls.			
---------	----------	--	--	--

Rosin—

Bombay,	3 brls.			
---------	---------	--	--	--

Salt—

Bathurst,		14 t.	4 c.	2 cs.
B. Ayres,		8,022		
Calcutta,		78	15	
Cameroon,		57		
Demerara,		26	15	
E. London,		4		
Fernando, Po,		5		
Gd. Bassa,		8		
Landana,		5		
Monrovia,		335		
Newport News,		8		500 bgs.
Noqui,		25		
Old Calabar,		100		
Para,		119		
Portland, M.,		924		
Portland, O.,		59		100 cs.
Rio de Janeiro,		50		
Shanghai,		200		
Sierra Leone,		25		
Talcahuano,		5		
Valparaiso,		25		
Accra,		5		
Barbadoes,		25		
Boma,		12	10	
Boston,		300		
Cape Lopez,		31	10	
Iquique,		10		
Lagos,		150		
New York,		18		
Rangoon,		407		
Santos,			400	
Valparaiso,			50	

Salt Cake—

New York,	50 t.	5 c.	£88	
Antwerp,	121	2	183	
Philadelphia,	30	8	35	
Newport News,	77		65	
Baltimore,	151	3	185	

Saltpetre—

Rio de Janeiro,	1 t.	8 c.	£34	
Maranham,	1	3	24	
Pernambuco,	2	17	70	

Sheep Dip—

B. Ayres,	1 t.	13 c.	£250	
Honolulu,	2	1	2 q.	42

Soap—

Accra,	212 bxs			
Alexandria,	77	24 cs.		
Algoa Bay,	3,070	205		
Amboyna,	1,500			
Antigua,	150			
Antwerp,		1,200		
Barbadoes,	850			
Batanga,	50			
Bombay,	2,185	5		
Boston,		1		
Cameroon,	75			
Cape Lahou,	30			
Cape Town,	1,020	70		
Christiania,		125		
Colon,	300			
Constantinople,		26		
Coronel,		1		
Delagoa Bay,	75			
Demerara,	4,562			
Durban,	32			
Durazzo,	60			
E. London,	2,674	45		
Ferrol,		2		
Gibraltar,	65			
Gd. Canary,		6		
Halifax,		300		
Hamburg,	1,000			
Honolulu,		1		
Iquitos,	120			
Kingston, Ja.,	1,200			
Kurrachee,		10		
La Plata,	6			
Leghorn,		1		
Madras,		26		
Manaos,	200			
Newport News,			1 ck.	
New York,	300	250		
Old Calabar,	300			
Penang,	50	3		
Pt. Elizabeth,	200	180		
Pt. Natal,	1,115	20	10 c.	
Rangoon,	700	4		

Rio de Janeiro,	1			
Rotterdam,	340			
St. John's,	452		8 crts.	
St. Nazaire,				
Shanghai,	2,340			
Singapore,	515	5		
Tangiers,	15			
Teneriffe,				
Trinidad,	1,009	2		
Aden,			50 bdl.	
Ambrizette,	140			
Amsterdam,	100			
Baltimore,			1 ck.	
Bluefields,	200			
Boma,	100			
Bonny,	550			
Calcutta,		212		
Colombo,		9		
Curacao,	535			
La Guayra,		1		
Las Palmas,	260			
Malta,		30		
Mandiji,	50			
Mosel Bay,	100			
N. Orleans,	302			
Portland, Me.,		1,935		
Punta Arenas,	5			
St. Lucia,		2		
Valparaiso,		1	50 dms.	
Victoria, B. C.,	164	500		

Soapstone—

Bombay,	100 bgs.			
---------	----------	--	--	--

Soda—

Lisbon,	2 cks.			
Bombay,	13 brls.			

Soda Alkali—

Bilbao,	50 brls.			
Leghorn,	35			
M. Video,		4 cks.		
Odessa,	50			
Seville,	125	132		

Soda Ash—

Antwerp,	100 cks.	792 bgs.		
Ancona,		30		
Bari,		200		
Bombay,	13			
Calcutta,			150 brls.	
Christiania,	12			
Higo,	243			
Johannesburg,			50 kgs.	
Leghorn,	33	430		
Lisbon,	27			
Napanea,			20 tcs.	
Newport News,		1,107		
Philadelphia,	53	1,134	55t	
Portland,		200		
Rio de Janeiro,	110			
Samarang,	35			
Salonica,			30 brls.	
San Sebastian,	66			
Smyrna,		500		
Windsor,		20	10 tcs.	
Yokohama,	150			
Baltimore,	41	6,895	535	
Barcelona,	70			
Boston,	351	3,180	237	
Brisbane,	40			
B. Ayres,			300 brls.	
Callao,	40			
Kobe,	314			
La Plata,		50		
Maranham,		20		
Melbourne,	353			
M. Video,		35		
Montreal,		400		
New York,	23	6,678	184 tcs.	
Shanghai,	8			
Sydney,	338			

Soda Crystals—

Bilbao,	9 cks.			
Calcutta,		32 kgs.		
Chalcis,			10 brls.	
Gibraltar,	34			
Halifax,		150		
New York,	420	112		
Philadelphia,	140	280		
		100 bgs.		
Rotterdam,		50		
Talcahuano,		385		
Boston,	40	200	1,018	
Malaga,		20		
M. Video,		10		
Montreal,		75		
St. John's, N.B.,		65		

Sodium Bicarbonate—

Hamburg,	1 t.	1 c.	£21	
Antwerp,	1	3	21	
Ghent,	10	10	210	

Sodium Bicarbonate—

Algoa Bay,	43 kgs.	50 bgs.		
Antwerp,	74	3 cks. 9 brls.		
Baltimore,		25		
Bombay,	60			
Bourgas,	50			
Calcutta,	1,130			

Callao,		4	
E. London,			75 kg
Galatz,	60		
Genoa,	230	13	20
Halifax,	900		
Hamburg,	95	13	
Ibrail,			75 lb
Johannesberg,	50		
Kingston, Jam,	30		
Kurrachee,	130		
Marseilles,	50		
Naples,	250		
Odessa,	265		
Oporto,	20		
Paris,	100		
Pasages,	70		
Tampico,			1
Toronto,	100	10	
Trinidad,	40		
Tripoli,	60		
Yokohama,	2,500		
Aleppo,			10
Alexandria,			50
Amsterdam,	20		
Barcelona,	120		
Bordeaux,	4		11
Boston,		50	
Brisbane,	140		
B. Ayres,	20		
Chalcis,			10
Constantinople,	50		
Hiogo,	150		
Leghorn,	170	12	
Messina,	10		
Nagasaki,	400		
Nantes,	10		
Newport News,	375		
New York,		100	
Piræus,	30		
Rotterdam,	40		
Sourabaya,			1
S. John's, N. B.	610		

21 brls.
12
31 t. 2 c. £420
12 c. £15

CHESTER.

Week ending February 28th.

49 dms. 1 ck.
16

20 brls.
50

14 tcs.

Carbonate—
16 cks.

Sulphate—
2,105 bgs.
3,214

40 dms.
6

30
2 1 ck. 5 tins.

5 cs.
4

20 cks.

28 dms.

2 cs.

3 cs.

207 bts.

34 dms.

37

25

7 cks.

2 cs.

20 brls.

100

9 cks.

90 cks.

45 cks.

1 ck.

10

6 cks.

10 dms.

13 cks.

10 bgs.

206 t.

208

3 cks.

150 sks.

19 cs.

9 cks.

40 dms.

6 cks.

6 cks.

10

HULL.

Week ending February 23rd.

Alkali—
Hango, 3 cks.

Ammonium Sulphate—
Dunkirk, 698 bgs.
Ghent, 1,163

Caustic Soda—
Naples, 49 dms.

Chemicals (otherwise undescribed)

Amsterdam, 20 cks. 6 pks.

Antwerp, 6

Bergen, 4

Boston, 25

Bremen, 650 10 cs. 2 pkgs.

Bombay, 4

Christiania, 1

Genoa, 4

Gothenburg, 10 74 11

Hamburg, 1 5 7

Odessa, 5

Rotterdam, 90

Cottonseed Oil—
Antwerp, 1,311 c.

Bergen, 68

Bremen, 101

Gothenburg, 50

Hamburg, 474

Marseilles, 60

Rotterdam, 2,383

Disinfectants—
Kurrachee, 20 kgs.

Dyestuffs (otherwise undescribed)

Amsterdam, 1 ck.

Hamburg, 1 cs.

Linseed Oil—
Bergen, 115 c.

Bombay, 775

Christiania, 485

Christiansund, 15

Drontheim, 134

Kurrachee, 20

Stavanger, 164

Mineral White—
Rotterdam, 10 cks.

Ochre—
Amsterdam, 2 cks.

Painters' Colours—
Amsterdam, 3 cks.

Antwerp, 1 3 cs. 156 dms.

Bombay, 5 226 1,060

Christiania, 6 1 40

Christiansund, 6 1 25 pkgs

Drontheim, 1

Dunkirk, 1

Genoa, 47 1 9 pks.

Gothenburg, 1 165 dms

Ghent, 1

Hamburg, 1 4

Marseilles, 124

New York, 10 10 pks.

Rotterdam, 3

Naples, 15

Pitch—
Antwerp, 94 t. 15 kgs.

Drontheim, 204

Naples, 100 cks.

Odessa, 1

Sheep Dip—
Kurrachee, 250 dms.

Soap—
Christiania, 2 cs.

Genoa, 1

Hango, 1

Tallow—
Rotterdam, 29 cks.

Tar—
Antwerp, 2 cks.

Ghent, 200

Odessa, 30

Rotterdam, 4

Treacle—
Bergen, 25 tcs.

Christiansund, 25

Drontheim, 25 cks.

Turpentine—
Bombay, 60 cks.

Varnish—
Antwerp, 2 bxs. 3 cks. 1 dm.

Genoa, 2 cs.

Gothenburg, 2 5

Ghent, 4 4

Hamburg, 4

Marseilles, 13 cs.

Whiting—
Bombay, 13 cs.

GLASGOW.

Week ending February 28th.

Acetic Acid—
Lisbon, £30

Albumen—
U.S.A., 2,103 lbs.

Ammonium Sulphate—
Penang, 5 t. 2 3/4 c.

Hamburg, 151 19

Demerara, 25 9

Asbestos—
Hamburg, 3 c.

Bleaching Powder—
Valparaiso, 1 t. 6 3/4 c.

Boiler Composition—
Hong Kong, £101

Carbolic Acid—
Rotterdam, £75

Castor Oil—
Fremantle, 1 t.

Coal Products—
Creosote Oil

France, 210 t.

Naphtha

France, 1 t. 19 c.

Pitch

Antwerp, 180 t.

Dunkirk, 51 11 c.

France, 164 7

Oporto, 50 4 3/4

Baltimore, 250 7

Bordeaux, 751 brls.

Tar

Calcutta, £124

Rangoon, 200 cks. 50

Singapore, 23 t. 14 c.

Hamburg, 23 t. 200 brls.

Rotterdam, U.S.A., 200 brls.

Dyestuffs—
Logwood

Oporto, 5 t. 17 3/4 c.

Guano—
Penang, 5 t. 1/2 c.

Iodine—
Rotterdam, £980

Linseed Oil—
Alexandria, 8 t. 12 3/4 c.

Egypt, 10 9

Madras, 2 17

Hong Kong, 1 11 3/4

Singapore, 1 2 3/4

Manilla, 1

Manganese—
Basle, 7 t. 14 3/8 c.

Manure—
Egypt, 30 t.

Penang, 5 1/2 c.

Ochre—
Demerara, 1 t.

Paint—
Egypt, £35. 10s.

Yokohama, £24

Bergen, 8 c.

Singapore, 273

Hong Kong, £86

Rangoon, 82

Yokohama, 67

Amsterdam, £2. 15s.

Calcutta, £134

U.S.A., 232 lbs.

Paraffin Wax—
Algoa Bay, 10 t. 18 3/4 c.

Antwerp, 1 4 3/4

Cape Town, 2 4 3/4

Egypt, 2 4

Arendal, 1

Yokohama, 5 1

Potassium Bichromate—
Antwerp, 5 t.

Rotterdam, £45

Higo, 2 11 3/4 c.

U.S.A., 23 8 3/4

Potassium Prussiate—
Higo, 8 c.

Rosin—
Calcutta, 5 t.

Sodium Nitrate—
Penang, 10 t. 4 3/4 c.

Sulphuric Acid—
Rangoon, 36 t. 8 3/4 c.

Treacle—
Bergen, 8 t. 1 c.

Christiania, 6 9

Bergen, £200

Varnish—
Calcutta, £40

White Lead—
Calcutta, £30

Demerara, 15 c.

TYNE.

Week ending February 23rd.

Alkali—
Rotterdam, 2 t. 13 c.

Oporto, 1 3

Antimony—
Savona, 1 t.

Arsenic—
Savona, 1 t. 2 c.

Asbestos—
Ergasteria, 3 c.

Bleaching Powder—
Christiania, 15 t. 5 c.

Rotterdam, 31 1

Drontheim, 11 2

Oporto, 2 2

Carbolic Acid—
Bergen, 2 c.

Carbonic Acid—
Ergasteria, 3 c.

Caustic Soda—
Christiania, 4 t. 7 c.

Manure—
Savona, 200 t.

Paint—
Ergasteria, 8 c.

Genoa, 4 t. 10

Soda—
Christiania, 25 t. 8 c.

Arendal, 5 4

Savona, 5 6

Rotterdam, 31 11

Bergen, 4 15

Oporto, 8 4

Soda Ash—
Christiania, 16 t. 6 c.

Sulphur—
Christiania, 10 t.

White Lead—
Malta, 5 t. 13 c.

Oporto, 11 9

GOOLE.

Week ending February 20th.

Benzol—
Boulogne, 75 cks.

Rotterdam, 25

Chemicals (otherwise undescribed)

Ghent, 3 cks. 65 pkgs.

Rotterdam, 75

Hamburg, 21

Coal Products (otherwise undes.)—
Boulogne, 3 cks. 2 cs.

Ghent, 12

Rotterdam, 70

Dyestuffs (otherwise undescribed)

Ghent, 1 ck.

Manure—
Boulogne, 91 bgs.

Ostend, 659

Ghent, 1,300

Painters' Colours—
Ghent, 1 ck.

Rotterdam, 2

Pitch—
Antwerp, 424 t.

GRIMSBY.

Week ending February 23rd.

Caoutchouc—
Esbjerg, 3 bls.

Chemicals (otherwise undescribed)

Antwerp, 5 cks.

Dieppe, 2 cs.

Hamburg, 4 bts. 3 10 13 pkgs.

Coal Products (otherwise undes.)—
Antwerp, 50 t. 2 cks.

Dieppe, 82 1 cs.

Hamburg, 11

Painters' Colours—
Hamburg, 1 cs. 5 cks. 9 2 pkgs.

Rotterdam, 9

PRICES CURRENT.

WEDNESDAY, MARCH 6th, 18

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

Acids:—		£ s. d.
Acetic, 25 % and 40 %	per cwt.	6/9 & 10/-
" Glacial	"	41/6
Arsenic S.G., 2000°	"	0 15 0
Fluoric	per lb.	0 0 3 3/4
Muriatic (Tower Salts), 30° Tw.	per bottle	0 0 10
" (Cylinder), 30° Tw.	"	0 3 0
Nitric 80° Tw.	per lb.	0 0 1 3/4
Nitrous	"	0 0 1 3/4
Oxalic	nett	0 0 3 3/4
Phosphoric, 1750°	"	0 0 11
Picric	"	0 0 10
Sulphuric (fuming 50 %)	per ton	15 10 0
" (monohydrate)	"	5 10 0
" (Pyrites, 168°)	"	3 0 0
" 150°	"	1 5 0
" (free from arsenic, 145°)	"	1 6 0
Sulphurous (solution) S.G. 1025	"	3 0 0
Tannic (pure)	per lb.	0 1 0
Tartaric	"	0 0 10 3/4
Arsenic, white powdered	nett per ton	14 10 0
Alum (loose lump)	"	4 17 6
Alumina Sulphate (pure)	"	4 15 0
Aluminoferrous	"	2 7 6
Aluminium	per lb.	0 3 0
Ammonia, Anhydrous	"	0 1 4
" 880=28° B.	per lb.	0 0 3
" =24° B.	"	0 0 2 3/4
" Carbonate	nett	0 0 3 3/4
" Muriate	per ton	22 10 0
" (sal-ammoniac) 1st & 2nd	per cwt.	39/- & 37/-
" Nitrate	per ton	40 0 0
" Phosphate	per lb.	0 0 10 3/4
" Sulphate (grey) London	per ton	11 7 6
" (grey) Hull	"	11 6 3
Aniline Oil (pure)	per lb.	0 0 5 3/4
Aniline Salt	"	0 0 4 3/4
Antimony	per ton	31 15 0
" (tartar emetic)	per lb.	0 0 7 3/4
" (golden sulphide)	"	0 0 10
Barium Chloride	per ton	6 10 0
" Carbonate (native)	"	3 5 0
" Sulphate (native levigated)	"	45/- to 75/-
Bleaching Powder, 35 %	nett	7 2 6
" Liquor, 7 %	"	3 10 0
Bisulphide of Carbon	"	11 0 0
Chromium Acetate (crystal)	per lb.	0 0 6
Calcium Chloride	per ton	2 2 6
China Clay (at Runcorn) in bulk	"	15/- to 30/-
Coal Tar Products and Dyes:—		
Alizarine (artificial) 20 %	net per lb.	0 0 8
Magenta	"	0 3 9
Anthracene, 30 % A, f.o.b. London	per unit per cwt.	0 1 1
Benzol, 90 % nominal	per gallon	0 1 1 1/2
" 50/90	"	0 1 1 1/2
Carbolic Acid (crystallised 40°)	per lb.	0 0 5 1/2
" (crude 60°)	per gallon	0 1 7
Creosote (ordinary)	"	0 0 2
" (filtered for Lucigen light)	"	0 0 2
Crude Naphtha 30 % @ 120° C.	"	0 0 5
Grease Oils, 22° Tw.	per ton	2 10 0
Pitch, f.o.b. Liverpool or Garston	"	1 13 0
Solvent Naphtha, 90 % at 160°	per gallon	0 1 2
Lucigen and " Wells Oils	"	0 0 2 1/2
Copper	per ton	38 7 6
" Sulphate	"	15 7 6
" Oxide (copper scales)	"	39 0 0
Glycerine (crude)	"	16 10 0
" (distilled S.G. 1250°)	"	45 0 0
Iodine	nett, per oz.	0 0 9
" Sulphate (copperas)	per ton	1 5 0
" Sulphide (antimony slag)	"	2 0 0
" (sheet) for cash	"	10 12 6
Litharge Flake (ex ship)	"	13 5 0
Acetate (white)	"	24 10 0
" brown	"	14 10 0
" (white lead) pure	"	16 0 0
" (white)	"	18 15 0

Lime, Acetate (brown)	per ton	5 12
" (grey)	"	8 10
Magnesium (ribbon and wire)	per oz.	0 1
" Chloride (ex ship)	per ton	2 10
" Carbonate	per cwt.	1 17
" Hydrate	per ton	17 0
" Sulphate (Epsom Salts)	per ton	3 0
Manganese, Sulphate	"	17 15
" Borate	per cwt.	2 15
" Ore, 70 %	per ton	4 5
Methylated Spirit, 61° O.F.	per gallon	0 1
Naphtha (Wood), Solvent	"	0 3
" Miscible, 60° O.F.	"	0 2
Oils:—		
Cotton-seed	per ton	18 0
Linseed	"	21 10
Petroleum, American	per gallon	0 0
Stearine	per ton	26 0
Phosphorus (yellow)	per lb.	0 4
" (red)	"	0 3
Potassium (metal)	per oz.	0 3
" Bichromate	nett per lb.	0 0
" Carbonate, 90% (ex ship)	per ton	17 5
" Chlorate	per lb.	0 0
" Cyanide, 98%	"	0 1
" Hydrate (Caustic Potash) 80/85 %	per ton	21 10
" (Caustic Potash) 75/80 %	"	20 0
" (Caustic Potash) 70/75 %	"	19 10
" Nitrate (refined)	per cwt.	1 2
" Permanganate	per cwt.	2 19
" Prussiate Yellow	per lb.	0 0
" Sulphate, 90 % (ex ship)	per ton	9 15
" Muriate, 80 % (do.)	"	8 12
Silver (metal)	per oz.	0 2
" Nitrate	"	0 2
Sodium (metal)	per lb.	0 2
" Carb. (refined Soda-ash) 48 %	nett per ton	4 15
" (Caustic Soda-ash) 48 %	"	4 0
" (Carb. Soda-ash) 48 %	"	4 0
" (Alkali) 58 %	"	3 12
" (Soda Crystals)	"	2 5
" Acetate (ex-ship)	"	14 5
" Arseniate, 45 %	"	11 0
" Chlorate	per lb.	0 0
" Borate (Borax)	net, per ton	20 0
" Bichromate	per lb.	0 0
" Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton	10 ton lots	9 15
" (74 % Caustic Soda)	"	8 15
" (70 % Caustic Soda)	"	7 15
" (60 % Caustic Soda)	"	6 15
" (60 % Caustic Soda, cream) (f.o.b.)	10 ton lots	6 12
" Bicarbonate	"	6 10
" Hyposulphite	"	5 10
" Manganate, 30%	"	10 0
" Nitrate (95 % ex-ship Liverpool)	per cwt.	0 8
" Nitrite, 98 %	per ton	29 0
" Phosphate	"	15 0
" Silicate (glass)	per ton	5 2
" (liquid, 100° Tw.)	"	4 2
" Stannate, 40 %	per cwt.	3 2
" Sulphate (Salt-cake)	per ton	0 17
" (Glauber's Salts)	"	1 5
" Sulphide	"	8 0
" Sulphite	"	5 5
Strontium Hydrate, 100%	"	8 10
Sulphocyanide Ammonium, 95 %	per lb.	0 0
" Barium, 95 %	"	0 0
" Potassium	"	0 0
Sulphur (Flowers)	per ton	7 5
" (Roll Brimstone)	"	3 5
" Brimstone: Best Quality	"	3 12
Superphosphate of Lime (26 %)	"	2 7
Tallow	"	24 0
Tin Crystals	per lb.	0 0
" English Ingots	per ton	63 10
Zinc (Spelter)	"	13 15
" Chloride (solution, 100° Tw.)	"	5 7

THE HEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

408.

SATURDAY, MARCH 16, 1895.

Vol. XVI.

Contents.

PAGE	PAGE
ics	173
ination of Sulphur in	174
roleum from U.S.A.	175
Exports for February,	175
ry Jottings	176
panies	176
st Column	177
gence	177
espondence	179
ms Decisions	179
lers	179
onia Products	180
Miscellaneous Chemical Market ..	180
Report on Manure Material	180
Liverpool Mineral Market	180
Tyne Chemical Report	181
The Metal Market	181
Liverpool Oil and Colour Market ..	181
West of Scotland Chemicals	181
Hull Paint, Oil, and Colour Report ..	181
New Companies	181
The Patent List	182
Gazette Notices	182
Imports	182
Exports	183
Prices Current	188

ADVERTISEMENT.

KS CHEMIST (aged 27), with Experience in e works, and Assistant to a Public Analyst requires Engagement in or Works; can undertake supervision of Plant.—Apply, "E.W.," Trade Journal Office, Manchester.

Notices.

Communications for the *Chemical Trade Journal* should be and Cheques and Post Office Orders made payable to—**IS BROS., 32, Blackfriars Street, MANCHESTER.**

Our Registered Telegraphic Address is—

"Expert, Manchester."

Terms of Subscription, commencing at any date, to the *Trade Journal*,—payable in advance,—including postage of the world, are as follows:—

ly (52 numbers) 12s. 6d.
-Yearly (26 numbers) 6s. 6d.
rtly (13 numbers) 3s. 6d.

will oblige by making their remittances for subscriptions by Post Office Order, crossed and payable to "Davis Bros."

ications for the Editor, if intended for insertion in the ek's issue, should reach the office not later than **Tuesday** f.

reports, and correspondence on all matters of interest to the and allied industries, home and foreign, are solicited. ents should condense their matter as much as possible, ne side only of the paper, and in all cases give their names sses, not necessarily for publication. Sketches should be arate sheets.

Advertisements.

Advertisements of Situations Vacant, Premises on Sale or To be Let, as Wants, and Specific Articles for Sale by Private Contract are be *Chemical Trade Journal* at the following rates:—

30 Words and under 2s. 6d. per insertion
Each additional 10 words 6s. 6d. "

vertisements, Announcements in the Directory Columns, and all Advert- t prepaid, are charged at the Tariff rates, which will be forwarded on

ements intended for insertion in the current week's issue ch the office by **Wednesday morning** at the latest.

CURRENT TOPICS.

THE SALT UNION.

THOUGH all legal proceedings in the Chancery Division in connection with the action brought by the Salt Union against Mr. H. I. Thompson have been formally terminated, the last of the proceedings which have arisen out of this case were concluded on Monday, when Mr. Rayner was charged at the Northwich Petty Sessions for inciting a salt worker named Littler to steal brine from Thompson's shaft. The particulars of the incident, in connection with which a workman named Davies fell down the shaft and was killed, have been given in the *Journal* comparatively recently, and will therefore be fresh in the minds of our readers.

At the end of the Chancery hearing, a statement was made by the counsel for the Salt Union to the effect that the trespass by their men was not the result of any directions given by the Union, but on the contrary was expressly opposed to the orders of the general manager, and that they regretted the incident and its result. This being so, Mr. Rayner appears to have come off well considering all things, as the magistrates imposed a fine of two pounds including costs. The summons against four of the men for conspiring to commit felony was withdrawn. The three other men associated with the case pleaded guilty to the attempt to commit felony, and were bound over to come up for judgment when called upon, a thing which most probably will never be done, and so the matter ended.

GOLD PRODUCTION IN THE RAND.

The production of gold in the Rand continues to increase, showing that the use of the chemical processes of extraction is not diminishing. In December last we anticipated that the total production would reach two million ounces, and our expectation was more than realised, the actual output, in round figures, being 2,024,000 ounces.

The return for the past month is rather smaller than the total for January, but the net production for the year is so far nearly 45,000 ounces in advance of the production up to the same time in 1894. Comparing the monthly output in this year and last, January shows an increase of about 28,000 ounces and February 17,000.

There is, however, ample room for increasing the percentage of gold recovered in the Rand by the further treatment of tailings and slimes, and in the face of recent developments, more particularly in connection with the recovery of gold from slimes, it would appear within the bounds of reason to expect the total production for the present year to approximate closer to three million ounces than to last year's total of two million and odd ounces.

TEXT-BOOK DICTION.

In the present day, when text-books of dubious worth abound and continue to multiply, it is pleasing to hear of criticism by those who have to use such books. The hints

of reviewers are seldom heeded, and the average professorial instructor runs a special compilation of his own, which he not unnaturally thinks fit to supersede all other text-books that have ever been written. It is refreshing, therefore, to find a professorial chemist taking text-books to task for their circumlocution, as Professor Peter T. Austen, of the Brooklyn Polytechnic Institute has recently done. The subject of his attack is the indiscriminate use of the verb "to take" in text-books, and even in articles by chemists of repute. The profusely with which this unsatisfactory verb is used in describing experiments is shown by a number of citations from recent text-books. Many of these are excellent examples of the careless style in which text-books are often written, when they should be patterns of precision and conciseness. It is certainly amusing, when viewed in this light, to find the description of certain experiments prefaced by such advice as "Take some white arsenic," "Take a seidlitz powder." In the former case it is highly probable the student would never live to see the conclusion of the experiment if he followed the advice literally. Again, the following is capable of considerable improvement—"The method of experimenting adopted by Graham was to take a bottle or jar, with a neck contracted somewhat, and fill it to within half-an-inch of the top with the solution of the salt to be investigated." Many other instances might be cited, but the foregoing are sufficient evidence of the need that exists for the careful revision of many elementary text-books of chemistry, with a view to eliminating, as far as possible, the "recipe-book" element which predominates in such a number.

ON THE ESTIMATION OF SULPHUR IN PYRITES.

By PROF. G. LUNGE.

UNDER the above title, Mr. T. S. Gladding has published in the *Journal of the American Chemical Society* (C. T. J., No. 384 p. 291), several modifications of the wet assay of pyrites which call for some comment on my part, since these modifications purport to be improvements on my method, contained in the "Alkali-makers' Handbook," and extensively employed in all countries.

Some of Gladding's modifications are of a less important character, and these can be passed in review very briefly. He does not, like myself, test the sample with its natural moisture, estimating the latter in a special sample, but he dries the whole sample and weighs it out in that state. He employs a whole gram of pyrites, I only half a gram; and I do so purposely, because the washing of the precipitates is much easier, and consequently the results are more reliable with the smaller than with the larger quantity. In lieu of the mixture of acids employed by me (three volumes of nitric acid of sp. gr. 1.42 and one volume of fuming hydrochloric acid) Gladding decomposes the pyrites with a solution of bromine and nitric acid. The prescription for that solution is not correct as printed, for seventy-five grams of potassium bromide can not possibly be dissolved in fifty grams of cold water, or anything like that quantity, but this may be a clerical error, which does not matter very much, as ultimately the solution is diluted to 500 c.c. I will say at once that the bromine solution works well, but no better than the acid mixture according to my prescription.

A more important modification is the following: It is well known that in the presence of iron the precipitate formed by barium chloride in a solution of sulphates can not be freed from iron, and that the results of the estimation of sulphur in this case are too low; in my publication of 1879 I found on the average 0.19 per cent. too little sulphur, unless the iron had been previously removed from the solution. Fresenius has also worked on this subject, and Jannasch and Richards, in 1889, completely elucidated it by proving that a double sulphate of barium and iron was formed in this case. Gladding gives a similar explanation, without mentioning the more complete investigations of his predecessors, which would have saved him the trouble of working out the matter for himself. I had already long ago dealt with that difficulty by proposing, in 1889, that method which was afterwards embodied in the "Alkali-makers' Handbook," viz., precipitating the iron by ammonia, washing the ferric hydroxide, and precipitating the sulphate in the filtrate by barium chloride. Gladding asserts, however, that "the most careful washing failed to wash out all the sulphur from the ferric hydroxide," and he therefore proposes to wash the hydroxide

as well as possible and to dissolve it afterwards in diluted hydrochloric acid, thereupon treating that solution with barium chloride; and with the tacit assumption that the small quantity of sulphide in that solution is accurately enough estimated as barium sulphate, in spite of the large quantity of iron present; but that assumption is not self-evident, nor does it actually represent the truth, as we see.

It is quite evident that Gladding, although he knows and quotes the "Alkali-makers' Handbook," and although he entirely adopts the prescription given there (page 93) for the precipitation of the hydroxide, which deviates not essentially from those previous by Fresenius and others, has not completely followed the instructions for the washing of the precipitate given immediately after in the same work: "Filter hot, and wash on the filter with hot water in channels in the mass, but so that the whole precipitate is thoroughly churned up with the water each time." Many of my pyrites tests made in my own and other laboratories proved that by following the above instructions the washing of ferric hydroxide is accomplished in from half an hour to an hour, the number of washings need not exceed five, and the bulk of the liquid, apart from the original filtrate, need not exceed 100 to 150 c.c., and that no trace of sulphur is left in the ferric hydroxide, as proved by drying the precipitate, fluxing it with pure soda, dissolving in water, and testing the solution for sulphate. It is true that students in my laboratory have sometimes failed to get out the sulphur, but in every case through having washed in the usual way instead of that described above, and the same men have succeeded in every case, after their attention had been drawn to this point.

There is another difference between Gladding's and my own method of proceeding. I prescribe heating the solution of the sulphate to boiling-point, as well as that of the barium chloride, adding the latter to the former all at once, allowing to stand for half an hour, and then at once filtering and washing while the liquid is quite hot. I am convinced myself that under these circumstances the precipitate is most easily, and no barium sulphate whatever subsequently removed from the filtrate. Gladding, however, not merely adheres to the usual and useless prescription of letting the liquid stand over night after precipitation, but he adds to this a novel and most tedious method of effecting the precipitation, viz., adding 50 c.c. of barium chloride solution quite slowly, one drop per minute. This will take an hour, instead of a few seconds, as in my method.

I considered it my duty to find out whether the method recommended by Gladding is better than mine, or inferior to it, or equivalent to it; and in the last case, which of the two is easier and quicker to execute. For this purpose a sample of Spanish pyrites was used which was triturated as usual, and mixed in the most careful manner. The tests were made by one of my demonstrators, H. von Keler, my constant personal supervision. First of all the sample was exactly according to the method laid down in the "Handbook," the following results:—50.17; 50.42; 50.20; 50.23; average, 50.24 per cent. The insoluble amounted to 1.42 per cent. the moisture to 0.47 per cent. I abstain from reducing the percentages to the dry state, as being unnecessary in this case.

As the next step, a number of samples were decomposed by Gladding's mixture of bromine solution and nitric acid. We followed the prescription in this item to be perfectly correct; it is not less hastened the process (which is much lengthier than that used by me for instance, by filling the water-bath from the first with hot water). Any attempt to do such a thing ends in an over-violent reaction, loss by spurning and separation of free sulphur. We tested, of course, our bromine and potassium bromide, and found them quite free from sulphuric acid.

Three of the samples thus decomposed, according to Gladding's method, precipitated exactly according to his method (one hour's precipitation, twelve hours' settling), another three samples according to his method precipitating all at once and filtering after half an hour). The results were:—

Gladding's Method.	Lunge's Method.
50.24	50.24
50.24	50.22
50.30	50.28
—	—
50.26	50.25

We see that both methods of precipitation give identical results, these also entirely agree with the tests made from the first according to the "Handbook" method, viz., 50.24. The conclusions to be drawn therefrom are: 1. Since both methods of precipitation yield the same result, my expeditious method of precipitation and filtration, inclusive of washing, takes about an hour, is preferable to Gladding's method, requiring about twelve hours. 2. Since Gladding's method for decomposing pyrites yields results identical with those described by myself, there is no reason for abandoning the latter in favor of a more tedious method, unnecessarily employing such agreeable reagent as bromine.

and from a private communication of Mr. Gladding's that the greatest value to his manner of precipitating the ferric hydroxide, and that in his opinion by operating in my way the ferric hydroxide is always carried down with the sulphate, making the results too high by 0.20 to 0.40 per cent. It would be most remarkable if that point had been over-looked by many thousands of tests made according to my methods by hundreds of different chemists; but in order not to incur the expense, I had this point put to another searching investigation. Jackson made five most careful tests of another sample of ferric hydroxide, imposing and otherwise treating them absolutely in the same way as making the precipitation in two cases by Gladding's method, and in two cases by my method. The results were:

Lunge's Method.	Gladding's Method.
50.59 per cent.	50.60 per cent.
50.63 " "	50.66 " "
50.56 " "	50.66 " "

Average, 50.59 " " Average, 50.63

is another thorough refutation of Gladding's assertion.

Analyses made up to this point the ferric hydroxide had been washed five times, exactly in the way described by my case it had been afterwards tested by fluxing with soda, of sulphur had ever been found. This furnished an additional (unnecessary) proof that Gladding's assertion in that the ferric hydroxide in hydrochloric acid and precipitating (barium chloride) is quite useless, when observing the precautions in the method out by me. Still I thought it advisable to find out if the process would work in cases where, by some mistake, ferric hydroxide had been left in the hydroxide, and I grant that in such cases the latter ought to be tested in some way or another. I further grant at once that in this case the method, as described, is more expeditious than mine: ferric hydroxide, detaching it from the paper, mixing it with carbonate, fluxing it in a platinum crucible (in such a case no sulphur from the gas can get into the mass, e.g., in a asbestos cardboard), dissolving in water and precipitating by barium chloride. It is hardly necessary to say that I did not choose this plan without first considering the very method described by Mr. Gladding; but I rejected it because genius had proved that barium sulphate is very distinctly insoluble in acid solution of ferric chloride. But as Gladding's method that the direct solution of the ferric hydroxide in acids yields accurate results, it became incumbent upon me to test this statement.

Samples of our pyrites were decomposed, and the ferric hydroxide was precipitated under absolutely equal conditions of temperature, and quantities of reagents. The washing was continued as far as it ought to have been; and as some experiments had shown that no uniform degree of exhaustion could be obtained by incomplete washing we estimated in all cases the ferric hydroxide, separating, of course, that which was found in the filtrate which was left with the ferric hydroxide. Four of the eight samples treated by Gladding's prescription, and four by my own method, the results were:

(with sodium carbonate).		Gladding (dissolving in hydrochloric acid)	
Precipitate.	Total.	Filtrate.	Total.
0.60	50.24	48.98	1.03 50.01
1.01	50.37	48.84	1.39 50.23
1.21	50.28	49.02	1.07 50.19
1.04	50.29	49.30	0.73 50.03
Average, 50.29		Average, 50.09	

It is seen that Gladding's method does not, in this particular, give low results (by 0.20 per cent.); with less complete washing the discrepancy would evidently have been even greater. The results found by my process, on the other hand, agrees quite well with the correct analyses quoted before.

The conclusion of this investigation must be: That in most cases Gladding's method is correct, but in not a single case more so; his modifications can not be approved, as they greatly increase the time required for the analysis, without any corresponding advantage. In one point which forms the principal novelty of his process, he is decidedly wrong. It is not true that it is so easy to leave any sulphur in the ferric hydroxide; on the contrary, it is very easy to avoid. If it has, after all, happened by manipulation, Gladding's plan will not get out all the sulphur, (fluxing with soda) must be adopted.

It is shown that there is not a single point recommended by Gladding's deviation from my method, which is fit for adoption, and I conscientiously advise my brother chemists to adhere to the method as I have laid it down in the "Alkali-makers' Handbook."

In conclusion I would add that I have also tried the method recommended by F. Johnson (*Chem. News*, 1894), omitting to precipitate the iron, but reducing it by sodium hypophosphite to the state of protochloride. Even when working precisely as described by the author, the results were so widely off the truth that I can make nothing whatever of this plan.

EXPORTS OF PETROLEUM FROM U.S.A.

THE Chief of the Bureau of Statistics, Washington, gives the following returns of the exports of petroleum and petroleum products for January, 1895. The total shipments were 77,264,410 gallons, compared with 79,718,836 gallons in January, 1894. The total for the seven months ending January 31, 1895, was 550,561,275 gallons, against 556,983,145 gallons during the same period in 1894. The details of the shipments are as follows:—

CRUDE PETROLEUM.		Gallons.
Total January, 1895 ..	..	9,287,973
" " 1894 ..	..	12,667,893
NAPHTHAS.		
Total January, 1895 ..	..	1,377,523
" " 1894 ..	..	563,922
ILLUMINATING.		
Total January, 1895 ..	..	63,131,113
" " 1894 ..	..	63,377,310
LUBRICATING AND PARAFFIN.		
Total January, 1895 ..	..	3,457,679
" " 1894 ..	..	3,107,695
RESIDUUM.		
Total January, 1895 ..	..	10,122
" " 1894 ..	..	2,016

IMPORTS AND EXPORTS FOR FEBRUARY, 1895.

THE Board of Trade returns for the past month are not very satisfactory, but due allowance must be made for the severity of the weather. The exports of salt show a decrease, and among chemicals bleaching materials only show an increased export.

IMPORTS OF FOREIGN AND COLONIAL PRODUCE

ARTICLES.	Quantities.	
	1894.	1895.
Margarine	Cwt. 102,820	81,819
Copper Ore and Regulus	Tons. 8,061	10,322
Pyrites	" 53,133	44,899
Tin	Cwt. 44,565	58,486
Alkali	" 5,695	2,393
Brimstone	" 46,505	66,550
Dyes, Coal Tar	£. 40,432	44,442
Saltpetre	Cwt. 26,478	11,763
Petroleum	Gall. 9,112,689	8,442,378
Turpentine	Cwt. 38,619	11,176
Guano	Tons. 3,623	554
Nitrate of Soda	" 13,079	5,410
Paraffin	" 48,319	64,040
Rosin	Cwt. 155,505	110,905
Tallow and Stearine	" 80,658	31,905
Oil Seed Cake	Tons. 23,320	19,423
Wood Pulp	" 19,777	14,608

EXPORTS OF BRITISH AND IRISH MANUFACTURES.

ARTICLES.	Quantities.	
	1894.	1895.
Alkali	Cwt. 429,758	394,760
Cement	Tons. 26,822	14,347
Coal and Coke	" 2,389,515	1,891,586
Copper, all kinds	Cwt. 87,812	65,041
Iron and Steel	Tons. 173,861	157,830
Chemical Manures	" 33,839	25,034
Oils, seed	" 5,888	3,171
Salt	" 42,210	33,057

Parliamentary Jottings.

THE BRITISH ALUMINIUM COMPANY AND THE FALLS OF FOYERS.

In the House of Commons last week, Mr. A. C. Morton asked the Secretary for Scotland whether his attention had been drawn to the statement that it was proposed by a public company to destroy the Falls of Foyers, on Loch Ness; and, if so, would he take prompt measures to prevent the destruction of what was of national interest, especially to tourists.

Dr. MacGregor wished to ask the right hon. gentleman, as these falls were part of his constituency, whether there were not two sides to the question? (Laughter.) Whilst he should deprecate the destruction of such grand and beautiful falls just as much as anybody else would, he could not help asking the right hon. gentleman to consider whether, especially as public works and factories were so scarce in this part of Scotland, it was not more desirable to encourage work of this kind than to discourage it, so that some employment might be found for the people in the locality.

Sir G. Trevelyan: My hon. friend has given me a serious problem to solve, but it is one which lies rather with the County Council than with me. I am informed, however, that the County Council have not yet met to consider the question referred to; but a meeting of the County Road Board, preparatory to holding a meeting of the Council, is called for Friday, 15th inst., to consider whether the British Aluminium Company can be allowed to submerge roads near Foyers in carrying out their proposed works. The Company deny that the falls will be destroyed, but the volume of water will no doubt be lessened at certain seasons of the year. The question, however, is receiving the attention of the County Council, who are, it appears to me, the proper authorities to deal with the matter.

CHAIR OF AGRICULTURE FOR GALWAY COLLEGE.

On Monday, Mr. Clancy asked the Chief Secretary to the Lord Lieutenant of Ireland whether he would favourably consider the question of establishing a chair of agriculture in the Queen's College, Galway.

Mr. J. Morley: The charter granted to this college in 1849 provided for a chair of agriculture. Subsequently, however, the Irish Government came to the conclusion that the three colleges of Galway, Cork, and Belfast would be benefited by the augmentation of the stipends of the professors at the cost of the abolition of certain of the then existing chairs, and it was decided to abolish the chair of agriculture as of subordinate importance to the colleges regarded as educational establishments. This change was practically carried into effect by the new charters of 1863, which provided that the next vacancies in that chair should not be filled. A re-establishment of the chair of agriculture would probably necessitate a fresh allocation of the endowment and reduction of the stipends of the other chairs, and I am not aware of the existence of any general desire for the re-establishment of the chair at Galway College.

Reports of Companies.

MESSRS. LEVER BROS., LIMITED.

The first annual general meeting of the shareholders of Lever Bros., Limited, was held last week, at the Cannon-street Hotel, London, Mr. W. H. Lever presiding. There were also present Messrs. James Lever, James Darcy Lever, and Percy James Winsor, and a fair number of shareholders. The report and balance-sheet showed a balance to profit and loss account for the year ended December 31 of £164,676. 9s. 4d., which was apportioned as follows:—Proportion of profit to be credited to the vendor company, £44,818. 14s. 2d.; dividend on preference shares, £16,717. 10s. 6d.; dividend on ordinary shares at the rate of 10 per cent. per annum, £39,657. 10s.; bonus to customers, £22,372. 5s. 8d.; reserve fund, £30,000.; and balance to next account, £10,010. 3s.

The Chairman, in moving the adoption of the report and statement of accounts, said that perhaps the most interesting point in connection with the company during the past year was that they had had the largest increase that they had had in any year since the business commenced. Many people would think that all their profit was made out of soap, but that was not so. A few years ago glycerine, which was a bye-product in soap-making, was poured away with the lees as refuse. This had led to a great many difficulties, owing to the matter contained in the lees becoming solid when the latter cooled, and thus stopping up drains. This led to inquiries, with a view to extracting the same, and the result was that the company was one of the first to be extraction to its present perfection, and they were now glycerine out of this bye-product that was so perfect as to pass *Hatfield* as being quite suitable to satisfy all the regulations

of the British Pharmacopœia. This was a very large source of profit to the company, as they were making thousands of tons of glycerine year, and it commanded a very high price. Some years ago the Alkali Co. was started, and they put up their prices quite 50 per cent. This was not considered satisfactory by Lever Brothers, and they worked, and within twelve months they made their own soda ash caustic, and they had now brought down the price of caustic to a less price than they had ever had it before, and they had now a source of revenue from the fact that they made their own alkali, also did their own printing, and there was no branch of their business that paid so large a return on the money invested in it as the printing department, a circumstance which could be well understood in fact that they printed as many as 300 million different items. Then, as regarded carriage, the works were situated in a position was unique for soap-making, as they were able to make communion direct by water with London and all other parts of the kingdom, taking London alone, the money saved by using this water instead of the railways was sufficient to pay all their expenses in London so that they were placed in as good a position on the London market as those manufacturers were on the spot. As regarded their exports abroad, they had their own office at Sydney, and had a fair share of the Australian soap trade. Their agency there also meant that they buy their tallow direct at the Sydney auctions, and in this and other directions were able to make great economies. They also had their own offices in Canada, in Brussels, and in Holland, and so well they progressing abroad that foreign soap-makers were never so much unless they were agitating their Governments to bring in higher duties to keep the company out, and this spoke volumes for the on which they entered in these countries. During the last few years the Swiss soap-makers were not satisfied in getting their raw materials condemned by saying that if they used the boxes they must pay soap duty, but these very men had now brought out a card-box in imitation of theirs. He was thankful, however, to say that this agitation had done the company more good than harm so far as their sales in Switzerland were concerned. In New Zealand two years ago the soap makers agitated that the company's soap should be classed as a toilet soap and not a laundry soap, as it was of such a superior quality; but whenever they went to the root of these agitations they found a scapegoat at the bottom, this individual in one case being a member of the Government. However, in spite of all this they had an increase of sales year, not only in England but in every district all round the world, but, when looking at their large balance, they must remember it was not made entirely out of soap, but from savings they effected in doing everything they possibly could do for themselves. He every reason to believe they would be in the same happy position next year, but it was, of course, best not to prophesy in these matters so far they had had a larger increase this year than they had time last year over the previous period. When they considered the state of the weather, and that people had been unable to get out for their whisky, let alone for washing, that spoke volumes for the strong position they occupied. (Applause.)

Mr. Newby seconded the resolution, and it was carried unanimously.

Mr. James Lever, in proposing the re-election of Mr. W. H. Lever as a director, said that the success of the undertaking was due to his brother's indefatigable energy and business capacity.

Mr. White seconded the motion, and it was unanimously adopted. The remuneration of the directors was fixed at £2,000. and auditors' fees at 200 guineas, and a vote of thanks to the chairman brought the proceedings to a conclusion.

SAN PATRICIO NITRATE CO. LIMITED.

At the recent meeting of this company the Chairman (Mr. H. Lowe) said that the directors had every confidence in the undertaking. At present, however, there were a few difficulties to contend against, consequence of a dispute which had arisen between one of the vendors resident in Chili and his representative in this country with reference to the contract mentioned in the prospectus. The difficulties, it was believed, were accommodating themselves.

ROBURITE EXPLOSIVES CO. LIMITED.

The directors' report for the year ended December 31, 1893, showed that, after providing for all necessary charges, the net profit for the year amounted to £6,603., which, added to the balance brought forward from 1892, gives a total of £7,300. to appropriate. An interim dividend at the rate of 5 per cent. per annum was paid on the preference shares in September last, and the directors now recommended payment of a further dividend at the same rate, making the full dividend of £4,654. for the year. This will leave £2,646. from which they propose to declare a dividend of 1 per cent. on the ordinary shares, carrying forward £926. to next account.

Paper-Makers' Column.

INDIGO-BLUE SURFACE COLOURED PAPER.

[SPECIALLY CONTRIBUTED.]

Indigo-carmines used for the production of indigo-blue surfaced papers is best obtained from a solution of indigo by precipitation with common salt. The vessel in which the precipitation takes place need not require to be large, there being no effervescence produced in this method of precipitation, as in the older method of precipitating carmine with soda. The precipitate subsides, moreover, very rapidly, so, whilst a day at least is required when soda is used, the precipitation of the two precipitates is also different; that obtained with common salt having greater covering power than the other. The precipitate obtained by precipitation with soda is always pasty, and is apt to form dark streaks on the surface of the paper.

Indigo-carmines are prepared as follows:—2½ parts of indigo are first reduced to a fine powder by passing it several times through a grinding stone, then spread upon a thick sheet of unsized paper in a layer of an inch deep and placed in a warm dry room for three days. A strong earthenware jar is then tared on a balance, and of medium quality is taken, 11¼ parts of fuming sulphuric acid accurately weighed off. It is usually reckoned that 1 part of good Bengal or Java indigo requires 5 parts of acid, but for other kinds from four to four and a half parts. The acid must take place in an open space so that the vapour may escape. The dry pulverised indigo is added to the acid in small quantities at a time while continually stirring with a glass rod, and care is taken to avoid overheating. When all the dry powder has been added, the mixture is allowed to stand and stirred from time to time. After three or four days the mixture will be dissolved, which can be ascertained by withdrawing a small quantity and examining it for any particles of indigo powder. If particles are noticed adhering to it, too little sulphuric acid has been used, and it is necessary to add a further quantity of acid, or one-half part, stirring well after the addition and allowing it to stand two or three days longer. The dissolved indigo is then filtered into 20 parts of cold soft water contained in a wooden vat, stirred gently, and allowed to stand 24 hours. The fluid is then poured through a linen cloth-filter into a second wooden vat provided with a tap filled in the bottom. The greenish black residue remaining upon the filter is preserved, and sold for use in the manufacture of felt hats.

The red indigo solution is now precipitated. The vat in which this takes place is made of wood, and should be of capacity (40 gallons capacity for 5½ lbs. indigo), and is provided with a tap in the side for running off the clear liquor, &c. It is supported from the ground, upon a wooden frame. The filtered indigo solution is poured into this vessel, and there is then gradually added a solution of common salt, containing 23 parts NaCl dissolved in 100 parts water. The indigo-carmines separate out as a very fine precipitate which remains suspended in the fluid. The whole must be filtered and the precipitate washed. The apparatus for filtering consists of two boxes resting upon one another, the bottom of the upper box being about 4 ft. 6 in. long by 2 ft. 6 in. wide and 1 ft. deep; the lower box is a little smaller, and is placed on cross spars directly over the upper. Small holes are drilled in the bottom of the upper box so that the liquid may escape. It is then lined with the filtering medium, and consists of a double layer of good unbleached linen, previously washed in a solution of crystal soda. The filter bag itself, consisting also of a solution of crystal soda. The filter bag itself, consisting also of a solution of crystal soda. The filter bag itself, consisting also of a solution of crystal soda. The filter bag itself, consisting also of a solution of crystal soda.

A quantity of the fluid containing the precipitated carmine is poured upon the filter to fill the pores of the linen filter cloth. A little of the precipitate which first passes through, is thrown away, and the bulk of the liquor in the large vessel. After a short time, a clear dirty yellowish-green liquid passes through the filter, which is thrown away, the indigo-carmines remaining behind. After the whole of the liquor has passed through, the filter is washed twice with cold soft water, the first wash water being allowed to pass through before the second is added. The first wash water is usually dirty, and is thrown away; but the second is clear, and may be used for a variety of purposes. After the filter is washed, the indigo-carmines are ready. It forms a thick, pasty mass, and is removed with a wooden spatula, and prepared for further use. Two and a half parts of indigo yield 35 parts of paste.

The paste is too concentrated for direct use in the manufacture of surface coloured papers, and therefore it is dissolved in 80 parts of water (60°C.) in a wooden vat by continual stirring for two or three days. The carmine should dissolve completely. The deep blue fluid is then poured to ascertain whether it is free from acid, the presence of which would cause the colour to pass through the paper, colouring it a dirty yellowish-green. In all surface-coloured papers,

the colour should not penetrate the texture of the sheet. Two beaker glasses are half filled with the indigo-carmines solution and a glass rod placed in each. Four or five drops of a strong aqueous solution of crystal soda (50%) is then added to one of the glasses and the mixture stirred. If only a trace of acid is present the fluid becomes much thicker than that in the other glass. When such is the case, one part of crystal soda dissolved in five parts of hot water is slowly added to the indigo-carmines fluid in the large vessel.

Indigo-carmines prepared in the above way is excellently adapted for producing blue surface-coloured papers, either by machine or by hand. Usually the paper receives only one coat on each side; the finest kinds are, however, coated twice, well sized papers free from wood being used. Weight, about 25 lb., d. crown. Six and a half reams of 480 sheets each, 13½ in. by 17 in., can be covered with 5½ lbs. of commercial indigo.

Legal Intelligence.

HIGH COURT OF JUSTICE. CHANCERY DIVISION.

(Before Mr. Justice Romer.)

LEONHARDT AND CO. v. KALLE AND CO. AND J. E. RUTTER AND CO.

Below we give a full report of the judgment of Mr. Justice Romer in this action, which was tried before him on the 8th, 9th, 11th, 12th, 13th, and 14th days of February, 1895, and to which we referred shortly in our issue of the 16th ult. (No. 404, p. 116.)

The plaintiffs in the action were represented by Sir Richard Webster, Q.C., M.P., Mr. J. Fletcher Moulton, Q.C., M.P., and Mr. Clare, instructed by Messrs. Grundy, Kershaw, Saxon, and Samson, solicitors, Manchester and London.

The defendants' counsel were Sir Edward Clarke, Q.C., M.P., Mr. Bousfield, Q.C., M.P., and Mr. Lawson, instructed by Messrs. J. H. and J. V. Johnson.

The expert witnesses called for the plaintiffs were Professor Dewar, Dr. Liebmann, Dr. Odling, and Dr. Bender; and for the defendants Professors Armstrong, Perkins, and Meldola, and Dr. Hepp.

The action, it will be observed, resulted in a complete victory for the plaintiffs on all points, the validity of their patent being established, and the defendants being restrained from infringing the same and ordered to account for the profits made by the past infringements and to pay the plaintiffs' costs.

In giving judgment, Mr. Justice Romer said: In this case there is considerable perplexity and great divergency in the evidence. It is a case of considerable difficulty, nor has the difficulty or the perplexity been lessened by the great number of exhibits which have been put in. To rightly appreciate the relative values of those exhibits alone requires a very careful following of the cross-examination as well as of the evidence-in-chief. And, accustomed as I am to conflicts of testimony of experts in cases like this, I can only say that in this case there appears to be even more than the usual conflict of evidence of the kind. On several points involved in this case it is practically impossible to attempt to reconcile the opposing evidence.

In what I am about to state I only give the conclusions of fact that I have come to on the balance of testimony before me, doing the best I can to arrive at a just and proper conclusion.

Now, in the first place, I must say that I think the invention which was the subject of this 1888 patent, the subject of this action, was a valuable and ingenious one, and a proper subject for letters patent. In many ways it was a remarkable discovery. It was known before that by taking paranitrotoluol sulpho acid (which I will call A for brevity), and treating it with caustic soda-lye, you get a yellow colouring matter, but that yellow colouring matter was not suitable for a dye, or, at any rate, had considerable defects, because so far as that matter was known and made prior to the 1888 patent it was not a fast dye. In the year 1886 the patentee of the patent of 1888 patented a discovery that by treating this yellow colouring matter with zinc dust, or any other corresponding reducing agent until you arrived at a permanently colourless product, you had obtained in that product a very valuable basis of colouring dye, and by the 1886 patent the patentee patented that discovery. Now, in obtaining this colourless product—this permanently colourless product—no doubt the patentee in his process passed through, if I may use the expression, certain stages of colouring matters which were at the time thought useless or unimportant, and were disregarded. But in the year 1888 he patented this remarkable discovery, that if you took the yellow colouring matter I have mentioned, and instead of treating it in accordance with the 1886 patent until it became perfectly colourless, you treated it with a deoxidising substance, sometimes called an oxidisable substance, and stopped when you got the full colouring matter from it that you then produced a matter which in itself was a new and a valuable dye, a dye for colours ranging from a yellow

through orange to brown. It was found that this was an excellent dye. It was fast to alkali. If so it will stand the stringent test of being fast to alkali which is frequently applied, and which is the one that has been applied by the plaintiffs to their expert process in this case, and which, in my opinion, is a fair test. Now that quality of fastness undoubtedly was a very important one, and I am satisfied that this dye, the subject of the 1888 patent, has a great advantage in that respect over the yellow colouring matter that I have previously mentioned. This discovery, and the process by which the patentee produced this new dye, was the subject of the 1888 patent, and as I have said before, I think, was the good subject of a patent. I may add here, once for all, that fast to alkali, in its commercial sense, or in its manufacturing sense, means that the fabric does not change colour, that is, get darker when an alkali test is applied. Apparently, or possibly, all colours get fainter if you boil them sufficiently long in a soda solution, but that is not what is meant by being fast to alkali.

Now, this being the patent, let me see what are the objections taken to it. It is said, in the first place, that it was anticipated by the patentee's own patent of 1886. In my opinion that objection entirely fails. The object of the 1886 patent was one quite different from the object of the 1888. The object of the 1886 patent was to obtain a colourless product, an entirely different result from the product the result of the 1888 process. In the specification of 1886 there was no suggestion that during the steps which are indicated as necessary to produce the colourless matter, the final product, intermediate products of a useful kind could be obtained. Still less was it shown how to obtain those intermediate products, even if they had been known to be useful. You certainly, in my opinion, could not gather from the patentee's discovery of 1886 or the specification of that patent, the invention which was the subject of the 1888 patent. I think, therefore, the objection that this invention was anticipated by the 1886 patent fails.

It was then suggested that it was anticipated by the paper which has been referred to as Walter's. Now in that paper I find no suggestion of the product which was the result of the 1888 process. I find no suggestion of the process, the subject of the 1888 patent. In Walter's process no oxidisable substance was used. If you follow Walter's process you do not get a fast dye, not one like the plaintiffs' 1888 dye in quality of fastness. Walter's process may have in itself a certain fastness to washing and milling, but it has not that fastness to alkali, it is not fast to alkali according to the test which, as I have said, I think the plaintiffs were right in saying ought to be applied in a case of this kind, and which, in my opinion, is important. But it is said that if you use considerable heat in a closed vessel under pressure for a considerable time following on, so to say Walter's process, beyond what he described, then you will obtain the product of the plaintiffs' 1888 patent. That is true. The reason why you obtain it is now supposed by the experts to be this: that in continuing the process in the manner I have mentioned, some deoxidising effect is brought about by the substance A acting on itself, and in this way you get a deoxidisation taking place, and in effect the plaintiffs' process of 1888. But that extension of Walter's process, and what you could get by so extending it, was a new discovery since the patent of 1888, and it is one not in any way, in my opinion, indicated in Walter's paper. It was not known, as I have said, at all, or suspected even, so far as I can see, before the 1888 patent. It is said, on behalf of the defendants, that there is no real difference between Walter's ordinary yellow and the plaintiffs' 1888 yellow. I think, on the evidence, on the balance of testimony, that there is a real difference, both as to fastness and otherwise, though it is possible that the plaintiffs' lighter dyes, lighter colours are not so markedly in contrast with the previous yellows as to fastness as the plaintiffs' dyes. That, I think, is possible. So much for Walter's paper and Walter's discoveries. As I have said they do not constitute any anticipation of the plaintiffs' patent.

The paper of Neale was referred to, but I think I may pass that over. By common consent it is not really material for the purposes of this action.

I ought to add a few words as to the paper of Bender and Schultz, which is said to be an anticipation, but that paper really was only an extension of the 1886 patent, and what I have said with reference to the 1886 patent, the alleged anticipation in substance applies to Bender and Schultz's paper. I am satisfied that any process that you could fairly have obtained from the knowledge given you by Bender and Schultz's paper would have been the first product of the 1886 patent if not the final colourless product, and that that first product would have been not a fast dye and certainly not the plaintiffs' product of the 1888 patent.

In result I hold that there is no anticipation of the plaintiff's patent; and to me it appears clear that there was nothing known before the date of the 1888 patent that took away from the patentee the merit of his 1888 invention. From such prior knowledge as there was, I am certain that experiment, research, and invention were necessary to ascertain and discuss the plaintiffs' invention, the subject of the patent; and with reference to that, it is noticeable that when the patentee in

the first place, after his 1886 patent, thought of seeing which could in any way find something useful as a dye from that yellow duct that I have mentioned, when his first attempt to deal with it in an exactly the contrary way, if I may use the expression to the in which he dealt with it in his 1888 patent, he tried to deal with oxidising instead of deoxidising, and he thought he had made a discovery by oxidising that yellow substance, and in fact he patented by a patent of 1887. It is clear under these circumstances that was really an invention on the part of the patentee in his 1888 discovery, in my opinion, and that that discovery formed the subject of letters patent, as I have before observed.

I now pass to an objection of an entirely different character, validity of this patent. I refer to the particulars of objections, bered 1 and 2, and, as to some of these objections, I must say if they were held valid, they would render it practically impossible to draw a specification for an invention like this that could be free from objection. But I will deal with these objections *seriatim*. Objection 1 contends that the complete specification is ambiguous and misleading on certain grounds. In my opinion it is not ambiguous and misleading. Let me deal with the various heads on which that objection is based in objection 1. Take objection A, which is the specification "shows no means for ascertaining what oxidisable substances are not suitable." Now with reference to that what the patentee done and what really could he do more? He has pointed numerous oxidisable substances, and admittedly those oxidisable substances he mentioned are as good if not better, and more easily obtained, with than the other oxidisable substances which are not specifically mentioned. Was it reasonable to suppose that the patentee ought to set himself down as a sort of dictionary to specify every known oxidisable substance and to point out which of those could not give useful results or which might be disregarded. I think having numerous examples of oxidisable substance that could be used, the patentee says that there are others which can be used, and that is all I do not think that he was bound to specify all possible oxidisable substances that could be used, or at all to point out which of the oxidisable substances not mentioned should rather be avoided as not being good as those expressly mentioned, and in reference to this point may deal with two special instances which have to be considered, reference also to other parts of this case. It is said on behalf of the defendants that there is a special difficulty in applying the plaintiffs' process when you use ferro-sulphate as the oxidisable substance, it is contended therefore that either ferro-sulphate is not within the patent, or that if it is, it renders the specification bad. But satisfied on the evidence as a whole that the plaintiffs' process set forth in his specification can be used, and used effectually with ferro-sulphate so as to produce the plaintiffs' dye of the 1888 patent with special merits, though no doubt you may use some of the other examples mentioned in his specification with ferro-sulphate to produce merely Walter's yellow or the yellow forming the first product of the 1886 patent; but in those cases the ferro-sulphate is not used before it can operate or take effect as a deoxidising substance, it is really in the cases where you make ferro-sulphate not properly used, is only in those cases where the examples given in the specification cannot apply if you take them exactly in the proportions and in the way mentioned in those examples, and put in ferro-sulphate into the oxidisable substance mentioned in those examples. Moreover, in my opinion, on the evidence, to produce even a darkish red brownish colour, with ferro-sulphate, according to the plaintiffs' process, you only have to take that care, and those steps which I think the chemists, to whom a specification like this is addressed, would you must take in such a case. Ferro-sulphate is a suitable oxidisable substance under proper precautions, such as chemists would know to take; as, indeed the defendants have in fact shown by what have done. But as I have to refer to what the defendants have on another part of this case on the question of infringement, I will not more here than what I have already said as to ferro-sulphate.

A similar objection was raised on behalf of the defendants to dust. What I have said with regard to ferro-sulphate to a great extent applies to this zinc dust, but it is said with regard to zinc that there is a special difficulty, because if you use it so as to give what I will call the colour producing stage mentioned in the specification you would get to the colourless stage of the 1886 patent and it is said it is an objection to the 1888 specification that that special direction in it against not proceeding to the colourless stage must say I think that objection extravagant. The specification itself tells you that you are to go on as long as colouring matter is left, and I feel satisfied that there would be no difficulty in following out, and a person ought not to complain that if he disregards the patentee's directions he does not obtain the patentee's result. In opinion zinc dust also is a suitable oxidisable substance under proper precautions such as chemists would know how to use, though I think it is not so suitable in this respect as those which are expressly mentioned in the specification.

(To be continued.)

Selected Correspondence.

CHROME LEAD COLOURS.

To the Editor of the Manchester Guardian.

May I ask the favour of a little of your valuable space for a upon the subject of chrome lead colours? I may plead in of my request—first, that the Home Secretary has already attention called to the matter, with the result that he has factory inspectors to inquire into and report upon it; and, that it was brought forward at the meeting of the Manchester of Commerce held on the 13th ultimo, and a resolution passed rate it. It may not be generally known that non-poisonous may be, and indeed are, being used in place of poisonous in producing orange and yellow shades, and with better it such is the fact. Cloths dyed to these shades by chrome rs commonly go to India, and are admittedly injurious both ho dye them and those who wear them. I can testify from rience to the dangerous qualities of the drugs employed. suffer from blood-poisoning in the hands and eyes; wearers ths, native Hindoos mostly, suffer similarly if they should scratch or sore upon any part of the skin which comes in th the dyed cloths. It is almost superfluous to add that the harged from works where these poisonous colouring matters ; injurious both to animal and vegetable life. Now, all these disappear when aniline dyes are used, while the colours pr-brighter and faster. I express a hope, with which all who l the subject will cordially sympathise, that the old poisonous ay be speedily superseded by the new, better, and non-method.—Yours, &c, PROGRESS.

ster, March 8, 1895.

RECENT CUSTOMS DECISIONS.

AMMONIACAL GAS LIQUOR.

was an appeal by Messrs. Allison and Tillman against the on of the Collector of Customs at Detroit, Mich., U.S.A., rate and amount of duties properly collectible on certain al gas liquor, imported September 28, October 2, and 3, 1894. In the opinion of General Appraiser Lunt:—

testants, Messrs. Allison and Tillman, imported into the port certain so-called gas liquor, upon which duty was assessed cent. *ad valorem*, under Sec. 3, as a non-enumerated, tured article, or as free. d merchandise is ammoniacal gas liquor, like that passed . A. 2,064; said liquor is produced in the destructive distilla- in the manufacture of illuminating gas, the resulting pro- ly being coke, illuminating gas, coal tar, and liquor contain- ia and sulphide of ammonia; the liquor so distilled becomes ss mixed with water in the process of purifying the gas; it is great sources from which ammonia used in the arts is derived. e the ammoniacal liquor appears to have been shipped from as was the case in G. A. 2,064, and the liquor has been to a process of purification and concentration, so that it much larger percentage of ammonia and sulphide of ammonia ontained in said liquor when first distilled, and its value reased; it is also in a condition to be more easily trans- d made available for the separation of its ammoniacal s.

e to hold this liquor to be a non enumerated, unmanufactured re would be no logical escape from the conclusion that the distillates of coal tar, of which there are many, are also non- d, unmanufactured articles; while this liquor is not the bject of the distillation of coal, in this case it is a valuable Carbonate of ammonia, muriate of ammonia, sulphate of are all made dutiable under sec. 8½ of the present tariff act *valorem* rate. It is immaterial whether the article is a , or the main product sought after in the distillation of coal ; icle entirely different from coal, and has become such by a manufacture, the same as candle tar, which is a residuum or obtained in the distillation of tallow, animal grease, and the production of stearine. (Standard Varnish Works v. it Court of Appeals, Second Circuit, 59, Fed. Rep., 456.) ful rate of duty appears to have been assessed, the protest is and the decision of the Collector affirmed.

HYPOSULPHITE OF SODA.

is an appeal by Messrs. E. and H. T. Anthony against the he Collector of Customs at New York, as to the rate and duties properly collectible on certain hyposulphite of soda September 20, 1894.

In his opinion, General Appraiser Lunt stated:—We find that E. and H. T. Anthony imported into the port of New York certain merchandise invoiced as hyposulphite of soda, on which duty was assessed at 25 per cent. *ad valorem*, under the provisions of parag. 60, Act of August 28, 1894, and which is claimed to be dutiable at 1½ cents per pound under parag. 67, as soda crystals.

(2.) That said merchandise is hyposulphite of soda, and is a chemical salt. It is not sal-soda, or soda ash, and not soda crystals, which is the carbonate of soda provided for in parag. 67. The protest is sustained, and the Collector's decision affirmed.

TIPS FOR TRADERS.

THE COKE OVEN industry at Dortmund has advanced very rapidly during the past year. The total number of ovens erected has increased considerably.

LIME is among the articles, the local production of which in Bulgaria is to be encouraged by the State under the new Bill which has recently been passed to help certain local industries.

ALUM SHALE figures in the mineral returns of Austria for 1893, to the extent of 13,370 tons.

SULPHURIC ACID was according to the same returns manufactured on a considerable scale, the total production being 10,248 tons.

CHROME ORE, cobalt, nickel and arsenic no longer appear in these returns, the production having been *nil*.

TARIFF CHANGES.

There are from time to time many alterations in the Customs' regulations abroad, which it is well for those trading in chemicals, oils, paints, and raw materials to be acquainted with. The following are some of the most recent changes of interest to the foregoing:—

BLAST FURNACE SLAG in the rough state is not subject to any duty when imported into Switzerland. When granulated, however, the duty is 20 cents per quintal, and in the ground state, 50 cents.

FORMALDEHYDE is subject to a duty of 8 francs per quintal.

BONE MEAL imported into the United States is dutiable at 30 per cent. *ad valorem*.

MATCHES when sent to Brazil, are now subject to treble duty.

SALT in the unrefined state has had the import duty doubled.

CARBON BISULPHIDE however, has been reduced in duty by 50 per cent.

PRUSSIAN BLUE imported into Mauritius is dutiable at 1 rupee per kilogramme.

POTASSIUM CHLORIDE and sulphate are subject to a duty of 25 annas per 1,000 kilograms.

BARYTES CARBONATE has to pay a similar duty.

SOLID PHOSPHORIC ACID and INSECTICIDES are likewise dutiable at 25 annas per 1,000 kilos.

Trade Notes.

RE-OPENING IRISH SULPHUR MINES.—It is stated that a movement is on foot for re-opening the sulphur mines at Ballymurtagh, county Wicklow, which were at one time in a flourishing state.

CHANGE OF ADDRESS.—We are informed that on and after 12th March, the address of the registered office of the Electric Construction Company, Ltd. (whose works are at Wolverhampton), will be Dashwood House, 9, New Broad-street, London, E.C., as formerly.

GOLD PRODUCTION.—The result of last month's crushings of the Simmer and Jack Gold Mining Company is 10,620 tons, 4,508 ounces of gold from mill, 382 ounces of gold by chlorination, and 2,155 ounces of gold from tailings by cyanide during last month. The Lisbon-Berlyn Company have received telegram giving the following results for February: Milled, 1,300 tons (of 2,000lb.); recovered, 93 ounces; tailings treated by cyanide, 1,600 tons; recovered, 655 ounces; total recovered, 748 ounces.

THE "CUMMER" DRYER FOR ALKALI MAKING.—Messrs. Charles Erith and Co., 70, Gracechurch-street, London, are finding a great demand for their "Cummer" automatic drying and calcining machines. They are replacing the furnaces hitherto used by one of the largest concerns in the Kingdom for the manufacture of alkali, and as by their methods bicarbonate is converted into pure alkali in one operation, all labour and half the fuel being saved, and the ammonia recovered, the advantages offered by their methods are obvious. Their recent sales include drying machines for a great variety of materials, and as these machines effect a great reduction in cost as compared with the methods replaced, there is no doubt a great future before them.

PROPOSED ADVANCE IN BURNING OIL.—At a meeting of the Scotch Mineral Oil Trade Association, in Glasgow, on Wednesday, a proposal was discussed to increase the summer price of burning oils $\frac{1}{4}$ d. per gallon. Although the meeting favoured the advance, it was agreed to defer coming to any decision until the end of April.

THE COMMERCIAL PRODUCTION OF ACETYLENE.—A company has lately been formed in Berlin, with a capital of £50,000., for the production of acetylene on a commercial scale. The title is the Gesellschaft für Verwerthung von Acetylen-gas. Messrs. Siemens and Halske possess a substantial interest in the new enterprise.

MASON COLLEGE CHEMICAL SOCIETY.—This society went on their first excursion to chemical and allied works on Thursday last week. The members commenced the day's proceedings as early as 10.45 a.m. by driving from the college to the Necesses Chemical Works, where, by permission of Mr. E. A. Brotherton, they inspected the processes of manufacturing sulphuric acid, sulphate of ammonia, &c. These works, it may be mentioned, were erected about eighteen years ago, for the purpose of making sulphate from the ammoniacal liquor produced at the Birmingham Gasworks.

WOODPULP *via* the CANAL: A RECORD WEEK.—The returns for the week ending March 8th show a total import into the United Kingdom of 48,449 bales and 259 tons. Of these no less than 31,034 bales arrived in Manchester *via* the Ship Canal, the consignments comprising three shipments from Christiania of 3,760 bales, 2,385 bales, and 1,580 respectively, 23,163 bales (equal to nearly 1,200 tons) from Halifax, Nova Scotia, and 148 bales from Rotterdam. The arrivals at other ports were as follow:—London, 8,450 bales; Fleetwood, 4,421 bales; Leith, 408 bales and 259 tons; Grangemouth, 1,422 bales; Hull, 1,067 bales; Liverpool, 1,000 bales; and Granton, 647 bales; a total for the rest of the kingdom of 17,415 bales and 259 tons. Some idea of the enormous quantity of this material which is consumed by paper mills may be formed from the fact, vouched for by Mr. S. P. Eastik when lecturing recently at the Imperial Institute, that in order to manufacture the paper used in each day's issue of a leading journal in New York seven acres of an "average forest" are absorbed.

THE PROSPECT IN NICKEL.—The future of the nickel trade is causing much interest in metallurgical circles. Since June last nickel has fallen between £40. and £50. per ton, and this heavy drop has had a serious effect on the industry, which was already in a sufficiently bad way. For the year ended June, 1894, the well-known firm of Hussey, Vivian and Co. lost over £40,000., and now the balance-sheets of the great French company, Société le Nickel, furnish an equally unsatisfactory record. The year showed, as compared with 1892-93., a deficiency of £41,760., there being £34,560. less profits and £7,200. more expenses. The profit from the sales has fallen from £80,000. to £56,000., and the interest on debentures has gone up £8,640. Out of the profit balance of £56,420. the directors propose to appropriate £26,800. on depreciation account—£6,800. to write off works in Europe, plant, machinery, &c., and £20,000. to be set aside to meet further depreciation on items where it may appear necessary to the council. This permits of only £1,200. being carried over to the current year. What will be the effect of the further great drop in the price of nickel on the accounts to be made up to June next?—*Financial News.*

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzols are quiet, but fairly steady in price, both 90's and 50/90's being quoted 1s. 1d., and 1s. 1½d. for forward. Carbolic acid is cheaper as far as regards crude, which is quoted 1s. 6½d. Crystals, 40%, are unaltered at 5½d. There is practically no change in naphtha, solvent being unaltered at 1s. 2d., and crude at 5d. Anthracene is steady, but creosote is dull. Pitch keeps steady at 33s. 6d. to 34s. 6d. prompt, and 33s. forward, f.o.b. East Coast.

Sulphate of ammonia is easier, owing largely to forced sales having enabled dealers to work prices down. Low terms have been accepted in the North, but otherwise there has been but little first hand business at ruling quotations, which are: Beckton £11. 7s. 6d., London outside makes £11. 2s. 6d., Liverpool £11. 2s. 6d., Hull £11. to £11. 2s. 6d., and Leith £10. 17s. 6d. to £11. Nitrate firm on spot.

REPORT ON MANURE MATERIAL.

There continues to be a moderate amount of business doing, but there is not much life in the market, and prices remain about as last reported. The quotation for 75/80% Florida phosphate rock remains 7½d. per unit, that for Peace River rock 6½d. per unit, that for South Carolina River rock 6¼d. per unit, and that for Algerian, 55/60%, 6¼d. per unit, in cargoes, c. f. and i. to good United Kingdom ports,

1895 steamer shipment, but these prices are probably about 1 unit above actual values. There is nothing to report in the River Plate bones: £4. 2s. 6d. per ton is probably outside anything afloat. Further sales of crushed Kurrachee bones in made at £4. 7s. 6d. per ton, ex quay. For shipment the same asked, but it is not obtainable. Bombay bone meal has been spot at £4. 6s. 3d. ex quay, and for shipment at £4. 3s. 9d. Common grinding bones are less inquired for, and are not over £4. per ton, ex quay. Nitrate of soda is scarce on the dearer. For ordinary quality 8s. 10½d. per cwt. now repaid good 9s. 1½d., and for refined 9s. 3d. per cwt. Arrived at port cargoes are worth about 8s. 7½d. per cwt., and cargoes due 8s. 6d. per cwt. The position of dried blood remains as last and value is unchanged.

MISCELLANEOUS CHEMICAL MARKET.

The market continues fairly active in all staple products of the trade, and there are no further changes to record in values for the week. Ammonia alkali still at £3. per ton, bags, f.o.r. makers. Soda crystals, if anything, are slightly lower, at 55s. to 57s. 6d. f.o.r. Caustic soda, f.o.b. Liverpool, 77%, £9. 15s.; 74%, £8. 11 70%, £7. 12s. 6d.; 60%, £6. 12s. 6d.; cream, 60%, £6. 10s. 10-ton lots and upwards. Leblanc ash 1d. per degree, in cargo. Chlorate of potash 4½d. per lb., soda 6½d. per lb. Sulphate 12s. 6d., with only moderate inquiry. For vitriol and muriatic there is the usual fair demand at this season, and prices are Bleaching powder steady at £7. nett, f.o.r., and £7. 5s. f.o.b. 8d. of copper £15. 5s., f.o.b. White powdered arsenic firm at £14 per ton, f.o.r. Garston. Potash, caustic and carbonate, are in request, and with slight stocks available, prices remain firm. A of lime, brown, unchanged in price, but only little business done spot at £5. 15s. per ton. Grey finds no sale. Other acetates generally, a depressed tone. Prussiate of potash and soda weaker at 9½d. and 7½d. respectively. Cyanide of potassium quoted lower. Trade in nitrate of soda and fertilizers generally active, as usual at this season, at moderate and all-round steady. In miscellaneous chemicals, trade is still far from being brisk.

LIVERPOOL MINERAL MARKET.

The briskness in our market reported last week has continued to improve, and prices are on the whole somewhat firmer, while in cases a slight advance has taken place. Manganese ore: The two small arrivals, but they are of no moment so as to affect the which continue firmer. Ground manganese is in good demand prices are unaltered at £6., £8., £10., and £12. 10s., according quality. Manganiferous iron ore: Grecian, 15s. to 16s. per ton Spanish, 16s. to 17s. 6d. per ton, c.i.f., in cargoes. Hume Hill brand, continues in brisk demand for ordinary purposes, and prospects of this article for the manufacture of aluminium are considerably better. Chrome ore: Arrivals this week have practically nil, with a further increase in the strong demand: are 65s. to 70s. per ton for 40% and 115s. for 50% ore. French Arrivals have somewhat improved, but stocks are rather reduced are rather free, and the prices are unaltered at 70s., 80s., 90s., 110s. per ton, for "Angel White" and "Gold Medal" and Tungsten metal is steady at 1s. 9d. to 2s. 3d. per lb. Ferro-titanium 1s. 11d. per lb. Plumbago is in good demand at £4. per ton qualities suitable for foundries, and better grades at £8. to £12. Fullers' earth continues steady, without alteration. Asbestos scarce at £15. 10s. to £17. per ton. Ochres are steady: French at 60s. per ton, and other brands according to quality.

TYNE CHEMICAL REPORT.

There is no alteration to report on this side in the position of chemicals, and until the re-opening of navigation in the Baltic business is only likely to be quiet. Soda crystals £1. 16s. 6d. gross weight. 76/77% caustic, £9. 10s. per ton, in demand. scarce, at £4. 5s., f.o.b. Other products unaltered.

Bleaching Powder, softs, £7. 5s. per ton, nett; hard, £7. 10s. nett; caustic soda, 76/77%, £9. 10s. per ton, nett; do., 70%, £8. per ton, nett; recovered sulphur, 2 cwt. bags, £4. 5s. per ton; soda ash, 48%, £3. 15s. per ton, nett; do., 52%, £4. 2s. per ton, nett; do., 56%, £4. 10s. per ton, nett; alkali, 98%, £4. 15s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 52%, £4. 15s. per ton, nett; do., 52%, £5. 5s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. per ton, nett; do., 1 cwt. kegs, £6. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 10s. per ton, nett.

ett; soda crystals, casks, £1. 16s. 6d. per ton, nett, at; do., 2 cwt. bags, £1. 16s. 6d. per ton, nett, netlorate of potash, 5½d. per lb., less 6%; pearl hardening, m, nett; pure white sulphate of alumina, £4. 2s. 6d. t; blanc fixe, £7. 10s. per ton, nett; chloride of barium, er ton, nett; carbonate of alumina, £28. 15s. per ton, inate of soda, £33. 15s. per ton, nett; in 5 ton lots, £28. 1, nett.

South Durham salt is still quoted at 9s. to 9s. 6d. per ton,

—Trade is very irregular. Collieries are, however, working r, and for delivery ahead sellers are asking higher prices are:—Best Northumbrian steam, 9s. to 9s. 6d. per ton; lities, 8s. to 8s. 6d. per ton; small steam, 3s. to 3s. 6d. per er ton, steadier, 6s. 9d. to 7s. 3d. per ton; gas coals, l. per ton. Coke, dull, 13s. to 13s. 6d. per ton.

THE METAL MARKET.

N, WEDNESDAY.—Pig iron, steadier: Scotch warrants closed, Middlesbrough 34s. 1d. cash, and hematite 42s. 4½d. m: Chili bars, G. O. B.'s and G. M. B.'s, closed at d. to £39. 2s. 6d. cash, and £39. 5s. to £39. 10s. three tin, better: Straits closed at £61. to £61. 10s. cash, and to £61. 17s. 6d. three months; Australian, £61. 5s.; English 5s. Lead, firmer: Spanish, £9. 13s. 9d. to £9. 15s.; p. 15s. to £9. 17s. 6d. Silesian spelter: ordinary, £13. 1ickel, 1s. 2½d. Antimony, £31. 5s. Quicksilver: first 10s.; second hands, £6. 9s. Copper shares, steady: Cape, Copiapo, 1½ to 1%; Libiola, 3¼ to 3½; Mason and to 1%; Rio Tinto, 12¼ to 12½; Tharsis, 4¾ to 4¾.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

Palm oil continues quiet, without material change. There sales of Lagos at £20 5s., and Accra at £19. 5s., both ere is very little olive offering, and the market is, therefore, rds price and position. Linseed continues dull, Liverpool port casks being still quoted 21s. to 22s. per cwt. Cotton-y quiet, although prices are much in favour of buyers, fined being quoted 17s. 6d. to 18s. 3d. per cwt., in barrels. f for castor oil is but moderate, though sellers offer good cutta at 2d. to 2½d., and first pressure French 2d. to . Tallow is steady, but quiet, without alteration in prices. vey firm in all grades, and more money is required for The marked firmness of spirits of turpentine still prevails, ice of 23s. 9d. per cwt. being satisfactorily supported by a ount of business. Petroleum is firm at an advance in h now stand at 5¼d. to 6¼d. for American, according to 4¾d. per gallon as the minimum for Russian refined. S are steady, without alteration in prices. ffordshire, common, £10., medium, £12., best, £15., common, 40s.; medium, 50s., best, 60s.; Welsh, best, is, 50s., and common, 18s.; Irish, Devonshire, 40s. to h, J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Umber: t; Devonshire, 50s. to 55s. White lead, £16. Red lead Venetian red, £6. to £10. Cobalt: Prepared oxide, ack, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2, ide of iron: Common, £7.; medium, £10.; finest, £20. £22. 10s. to £25.

BEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

Last time of writing the course of sulphate of ammonia has unexpectedly downwards, with a considerable drop for so d of time. For prompt Leith delivery, some of the makers d to take down to £11., and only one or two are looking that. The fall is probably due, in part at least, to the mineral oil masters to include as many sulphate sales as he business of their financial year, which closes at the end

ry chemicals there is no improvement to note, unless a int of inquiry re early shipping requirements for the Baltic : reckoned as such. Prices show little of change, but what tends downwards.

Is are still in considerable delivery at the old prices, but tive season is now well through, and must soon close. The ort that some forward buying in solid paraffin has taken raised prices (as now given below), but, of course, under

certain conditions of eventuality. The Scotch companies are not ye agreed amongst themselves as to the American Standard difficulty Present deliveries are all at the old prices under contracts.

Chief prices current are:—Soda crystals, 35s. nett, Tyne; soda ash, 48/52°, £3. 15s. to £4. 5s. nett, Tyne; white alkali, 48/52°, £4. 10s. to £5. 5s. nett, Tyne; alum in lump, £5. 10s. nett, Glasgow; caustic soda, white, 74° £9., 70/72° £7. 15s., 60/62° £6. 15s., and cream 60/62° £6. 10s., all nett, Liverpool; bleaching powder, £6. 5s. to £7., nett, Tyne; saltcake, 17s. 6d.; borax, English refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 4¾d. less 5%, Liverpool; nitrate of soda, 9s. 1½d.; sulphate of ammonia, £11. to £11. 1s. 3d. f.o.b. Leith, for prompt; sal-ammoniac, first and second white, £39. and £37. nett, any port, sulphate of copper, £15. 5s. less 5%, Liverpool; paraffin scale, hard 2¼d.; and soft, 1¾d. to 2½d. per lb.; paraffin wax 120° semi-refined, 2¾d. to 2¼d.; paraffin spirit (naphtha), 4½d. per gallon; paraffin oil (burning), standard No. 1 grade, 4¾d. at works, for Scotch buyers (English sales, ½d. to ¾d. lower); ditto (lubricating) 865° £4. 5s.; 885° £4. 10s. to £5., and 890/895° £5. to £5. 10s. Week's imports of sugar at Greenock were 12,551 bags beet unrefined, and 1,800 bags beet refined.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—Business is well maintained, but owing to the market being bare of stocks of linseed, many mills are closing, awaiting the arrival of cargoes of ships due to arrive any time within the next few days; in consequence linseed oil is extremely scarce, and it is not so much a question of price as it is getting deliveries. The import of linseed for the week has been 477 qrs. from Rotterdam; also during the week has been imported 2,646 tons of cottonseed from Alexandria. Linseed oil firm at 19s. 9d. to 19s. 10½d. Forward positions also stronger: 19s. March-April, 18s. 1½d. to 18s. 3d. May-Aug., and 17s. 10½d. to 18s. Sept.-Dec. Boiled and refined ditto from £1. to £2. per ton extra. Export for the week, 400 cwt. Refined cotton oil flat, with sellers at 15s. 7½d., naked, spot; March-April, 15s. 9d.; and May-Aug., 16s. 3d. Crude, naked spot, 14s. 3d., and March-April; and 14s. 7½d. May-August. Edible qualities from £1. to £2. per ton extra. Casks 17s. 6d., and ordinary barrels 25s. per ton extra. Export of refined for the week, 4,460 cwt. Rape oil neglected. Olive oil, £32. to £38. per ton. Castor oil, 2½d. per lb. for first pressure, and a falling market. Cod oil, £16. to £18. per ton. Sod oil, for curriers, etc., £15. to £22. per ton. Vegaline, a new vegetable butter, perfectly neutral, white, and sweet, £31. per ton. Boiled drying oil, £12. per ton. Soft soap, 14s. 6d. per cwt. Anglo-American Oil Company advise advance of their products by 7s. 6d. per ton.

CAKES.—Linseed cakes quiet but steady, owing to scarcity of spot seed: 95%, pure, £7. to £7. 2s. 6d. per ton; Russians, £6. 5s. to £6. 15s. per ton; oilcakes, £5. 12s. 6d. to £5. 15s. per ton. Cotton cakes dull at previous rates: best makes, £3. 10s.; seconds, £3. 7s. 6d. per ton. Rape cakes unchanged.

PAINTS.—The demand continues to improve. Prices are: Ready-mixed paints, in lever tins of 1, 2, 7, and 14lbs., £25. per ton. Washable distemper colours, ground in water, various shades, £24. per ton. Red and white leads unchanged. Paint remover, 25s. to 30s. per cwt. Venetian red, oxide of iron, black, blue, green, and yellow ochre paints, from £12. per ton. Venetian red, dry, from £4 per ton. Yellow ochre, dry, from £4. per ton. Ultramarines from 3d. to 8d. per lb. Black varnish, in barrels, from £5. 10s. per ton. Oak varnish from 5s. per gallon.

New Companies.

G. D. Webster and Son, Limited. CAPITAL £30,000., in shares of £10. each. This company has been formed to acquire, as a going concern, the business of Messrs G. D. Webster and Son, at Kingston-upon-Hull, and to trade as manufacturers and dealers in anti-fouling enamels and compositions, paints, varnishes, oils, etc. The subscribers to the memorandum of association are:—W. Webster, 5, Grandville-terrace, Bridlington Quay, paint manufacturer; G. Vincent, Norwood, Beverley, near Hull, secretary; W. A. Allison, 10, Arnold-street, Hull, director of company; E. Allison, Anlaby-road, Hull, oil merchant; H. Samman, Beverley, shipowner; W. A. Newbold, Norwood House, Beverley, shipowner; T. F. Judge, Helmsley, Cottingham, near Hull, chartered accountant.

Irwell Rubber Company, Limited. CAPITAL £30,000., in shares of £10. each. This company has been formed to take over the

works of Isidor Frankenburg, at Ordsal Lane, Salford, and to carry on the business of rubber manufacturers, etc. The subscribers to the memorandum of association are:—I. Frankenburg, Overbrook, Kersal, manufacturer; J. Tinto, Oakfield, Ashton-on-Mersey, manufacturer; A. Coutts, 85, Monton-road, Eccles, manufacturer; A. Warburton, 7, Greame-street, Moss Side, cashier; C. O. Weber, 2, Randolph-street, Crumpsall, chemist; W. H. Barlow, 41, Whitelaw-road, Chorlton-cum-Hardy, cashier; H. T. Dreschfeld, Broughton-park, Salford, dentist.

Nitrate Producers' Steamship Company, Limited CAPITAL £100,000., in £5. shares. This company has been formed to acquire and work steam and other ships, more particularly for the carriage of nitrate of soda. The subscribers to the memorandum of association are:—T. Fry, M.P., Darlington; G. Fleming, 9, Billiter-square, E.C., merchant; J. T. North (by his attorney, H. North), 3, Gracechurch-street, E.C., engineer; E. Manly, 3, Gracechurch-street, E.C., civil engineer; J. T. Short, Sunderland, shipbuilder; G. North (by his agent, B. Depledge), 3, Gracechurch-street, E.C., gentleman; S. Lawther, Belfast, shipowner; J. Fleming, 9, Billiter-square, E.C., merchant.

South African Saltpetre Fields, Limited. CAPITAL £750,000., in shares of £1. each. This company has been formed to prospect for and work deposits of potassium nitrate, and to reduce, sell, and deal in the same, also nitrate of soda, salts, chlorides, and asbestos, etc. The subscribers to the memorandum of association are:—J. Fford, 17, Victoria-street, S.W., civil engineer; A. Fraser, Westerfield House, near Ipswich, manufacturer; A. Bull, West Marden Hall, Eversworth, Hants, merchant; H. P. Barraud, 7, St. Mildred's-court, E.C., solicitor; J. B. Chalmers, The Elms, Highgate-road, N.W., gentleman; A. Jackson, 3, Copthall-buildings, E.C., stockbroker; E. H. Jupp, 7, St. Mildred's-court, E.C., solicitor.

The Patent List.

This list is compiled from Official sources in the Mechanical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report progress upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT
 Manufacture of Lead Pipes and Substitutes for Lead. R. D. R. 3,966. February 25.
 Extracting Precious Metals. J. Mactear. 4,004. February 27.
 Apparatus for Mixing Precipitants with Sewage. J. Berry. February 26.
 Bleaching Paper Pulp. J. Tait. 4,108. February 26.
 Tanks for the Precipitation of Sewage, etc. J. S. Pickering. February 27.
 Manufacture of Dry Soap. D. W. Nightingale and H. H. Peck. February 27.
 New Process for Manufacture of Chlorine. J. J. Abinger. 4,242. February 27.
 Improvements in Thermometers. J. J. Hicks. 4,254. February 27.
 Improvements in Manufacture of Chlorine. J. V. Johnson. February 27.
 Improvements in Covers for Salt Pans. O. Tschudi. 4,273. March 1.
 Improved Apparatus for Drying Superphosphates, etc. C. Zinner and Messrs. H. J. Merck and Co. 4,429. March 1.
 Improvements in Manufacture of and Purification of Bicarbonate Soda. A. E. Hetherington, W. M. Sowerby and J. Brock. 4,447. March 1.
 Refining Oils. C. A. McKerrow. 4,456. March 2.

Gazette Notices.

BANKRUPTCY ACTS, 1833 and 1890.

Receiving Orders.

ALLEN, J. FENWICK, Widnes, employe of the United Alkali Co., Ltd.
 MOTLOW, JOSEPH HENRY, and MOTLOW, BERT (carrying on business as Messrs. Allen, Fenwick, Motlow and Co.), Bilston, galvanisers and stampers.

IMPORTS OF CHEMICAL PRODUCTS AT THE PRINCIPAL PORTS OF THE UNITED KINGDOM

LONDON.									
Week ending March 2nd.									
Acetanilide—									
Holland,	10 cks.	F. Boehm							
Acetic Acid—									
Holland,	70 pkgs.	F. J. Putz & Co.							
"	30	A. & M. Zimmermann							
"	70	Phillipps & Graves							
Acetone—									
Belgium,	6 drs.	H. Lorenz							
France,	13	W. S. Blagden							
Holland,	9	T. H. Lee							
"	1	A. E. Piggott							
Alum—									
Holland,	53 cks.	Ohlenschlager Bros.							
"	3	J. Barber & Co.							
Aluminium—									
Belgium, £320		Major & Field							
Ammonium Chloride—									
Belgium,	4 cks.	Kaltenbach & Schmitz							
"	15	H. Lorenz							
Antimony Ore—									
Sydney,	25 t.	Pillow, Jones & Co.							
France,	50	Smith, Sundius & Co.							
A. Turkey,	44	French & Smith							
Japan,	13	R. Warner & Co.							
Arsenic—									
Germany,	10 cks.	L. & I. D. Jt. Co.							
France,	10 brls.	F. Stahlschmidt & Co.							
Asbestos—									
France,	£30	Girard Frs. & Co.							
Germany,	110	Craven & Co.							
Barium Chloride—									
Holland,	11 cks.	Petri Bros.							
Bromine and Bromide of Iron—									
Germany,	40 pkgs.	A. & M. Zimmermann							
Camphor—									
Germany,	9 cks.	L. & I. D. Jt. Co.							
"	2 cks.	City Coml. Wf., Ltd.							
"	3 pkgs.	Fuerst Bros.							
China,	308	Hale & Son							
"	100 brls.	L. & I. D. Jt. Co.							
Germany,	3 pkgs.	T. H. Lee							
Caoutchouc—									
Zanzibar,	24 c.	Clarke & Smith							
"	6	Hale & Son							
Rep. Col.,	35	Prop. Bull Wf.							
Germany,	7	Lewis & Peat							
"	37	L. & I. D. Jt. Co.							
"	17	H. Kiver & Co.							
Madagascar,	31	Kleinwort Sons & Co.							
Singapore,	96	L. & I. D. Jt. Co.							
Zanzibar,	9	Arbuthnot, Ewart & Co.							
Aden,	1	Hale & Son							
Madagascar,	10	Prop. Bull Wf.							
E. Indies,	72	L. & I. D. Jt. Co.							
France,	33	Stiebel Bros.							
"	14	H. Johnson & Sons							
Germany,	41	Wallace Bros.							
Singapore,	70	Huttenbach & Co.							
N. Zealand,	35	W. Bauer & Co.							
France,	48	Henbach & Co.							
"	50	L. & I. D. Jt. Co.							
Carbolic Acid—									
Holland,	30 pkgs.	J. Owen							
Castor Oil—									
Italy,	10 cks.	L. & I. D. Jt. Co.							
"	10	Hodgkinson, Preston & Co.							
E. Indies,	90 cks.	Ross & Deering							
"	200	W. Balchin							
Italy,	10	L. & N. W. Rly.							
Belgium,	80 brls.	Fuerst Bros.							
Caustic Potash—									
Holland,	91 c.	J. M. Steel & Co.							
Belgium,	100	Petri Bros.							
Chemicals (otherwise undescribed)									
Holland, £15, 10 drs.		Phillipps & Graves							
Germany,	17 cks.	Craven & Co.							
"	3 cks.	L. & I. D. Jt. Co.							
"	10 pkgs.	A. & M. Zimmermann							
"	1	T. H. Lee							
"	2	J. Barber & Co.							
Belgium,	11	T. Palmer							
Copper Carbonate—									
France,	5 cks.	J. M. Steel & Co.							
Copperas—									
Germany,	16 cks.	L. & I. D. Jt. Co.							
"	10	W. J. Cook							
Cream of Tartar—									
France,	8 cks.	B. & F. Wf. Co.							
"	30 pkgs.	Finlay & Co.							
Dextrine—									
Germany,	5 bgs.	L. & I. D. Jt. Co.							
Holland,	10	H. Lorenz							
Dye-stuffs—									
Argols									
Italy,	1,528 bgs.	B. Jacob & Sons							
"	39 cks.	Thames S. T. & L. Co. Ld.							
"	28	Lighterage Co.							
Cochineal									
Canaries,	29 bgs.	W. Dutton & Co.							
"	17	Swanston & Co.							
"	25	G. S. Bruce							
"	5	W. M. Smith & Sons							
"	19	J. W. Borland							
"	12	Sperling & Williams							
"	28	Marshall & French							
Gutch									
Rangoon,	500 bxs.	Leach & Co.							
"	120	Arracan Co.							
"	191	Brown & Elmslie							
"	12	Bullock Bros. & Co.							
Extracts									
France,	70 cks.	B. & N. Wf. Co.							
"	12 cks.	Summerhagen & Co.							
Austria,	200 brls.	A. J. Humphrey							
Holland,	6 cks.	Phillipps & Graves							
France,	120 cks.	L. J. Levinstein & Sons							
"	210 pkgs.	Prop. Chmbln's Wf., Ltd.							
"	60 drs.	Carey & Sons							
Germany,	100 bgs.	T. H. Lee							
U. States,	50 bxs.	Skillbeck Bros.							
Fustic									
B. W. I.,	20 t.	Anderson, Anderson & Co.							
"	5	Park, Macfadyen & Co.							
"	168	Benckendorff & Co.							
Belize,	18	Belize Estate Prod. Co.							
Gambier									
Singapore,	18 t. bls.	L. & I. D. Jt. Co.							
Indigo									
E. Indies,	10 cts. 65 pkgs.	Ross & Deering							
"	10	H. Lambert							
"	43	Arbuthnot, Latham & Co.							
"	166	J. Owen							
"	150	Park, Macfadyen & Co.							
"	41	Crousdale & Co.							
"	12	Walker, Munie & Co.							
"	77	H. Johnson & Sons							
Logwood									
H. W. I.,	57 t.	A.							
"	79	Anders							
Belize,	100	Park, M.							
"	302	Belle							
Myrabolams									
E. Indies, 2,230 bgs.		Barron							
"	273	Dun							
"	5,460	L. & I. D.							
"	350	Perry, Deane							
Orchella									
Portugal,	78 bgs.	J.							
Saffron									
Spain,	1	Dun							
"	1	B. & N.							
"	1	W. J. B.							

Starch—		
Hamburg,	128 cs.	
Antwerp,	106	3 bgs.
Tar Waste—		
Rotterdam,	4 cks.	
Tartar—		
Hamburg,	22 cks.	
Antwerp,	18	
Tartar Emetic—		
Hamburg,	16 cks.	
Ultramarine—		
Hamburg,	5 cs.	
Verdigris—		
Bordeaux,	1 ck.	J. & P. Hutchinson
Wood Pulp—		
Halifax,	23,163 bdis.	
Christiania,	2,383 bla.	Manchester Ship Canal Co.
	1,580	
Zinc Oxide—		
Antwerp,	65 brls.	

HULL.

Week ending March 2nd.

Acetic Acid—		
Antwerp,	19 pks.	Bailey & Leatham
Acid—		
Bari,	25 cks.	Wilson, Sons, & Co., Ld.
Alkali—		
Rotterdam,	19 cks.	Hutchinson & Son
Barytes—		
Antwerp,	35 cks. 40 bgs.	Bailey & Leatham
Bremen,	22	Wilson, Sons, & Co., Ld.
Antwerp,	19	300 bgs. "
Candles—		
Antwerp,	299 bxs	Wilson, Sons, & Co., Ld.
Rotterdam,	1	pkge.
Castor Oil—		
Leghorn,	35 cs.	Wilson, Sons, & Co., Ld.
	6	
Cellulose—		
Trieste,	400 bls.	Wilson, Sons, & Co., Ld.
Chemicals (otherwise undescribed)		
Bremen,	8 cs.	Veltmann & Co.
Hamburg,	20	Wilson, Sons, & Co., Ld.
Cod Oil—		
Drontheim,	5 brls.	Wilson, Sons, & Co., Ld.
Aalesund,	112	
Colours—		
Rotterdam,	18 cks. 4 cs.	Hutchinson & Son
"	4 bxs. 4	9 pks. W. & C. L. Ringrose
Hamburg,	4	Bailey & Leatham
Antwerp,	10 cs.	3 pks. Wilson, Sons, & Co., Ld.
Ghent,	9 brls.	Sissons Bros.
"	1	J. W. Davis & Son
Cottonseed Oil—		
New York,	102 brls.	Wilson, Sons, & Co., Ld.
Dyestuffs—		
Alizarine		
Rotterdam,	63 cks.	W. & C. L. Ringrose
Sumac		
Palermo,	525 bgs.	Wilson, Sons, & Co., Ld.
	286	
Valonia		
Smyrna,	205 t.	
Farina—		
Hamburg,	50 bgs.	White & Son
"	25	G. Holmes & Co.
"	25	Rayner & Wardles
"	30	
Harlingen,	100	
Hamburg,	250	W. & C. L. Ringrose
Dunkirk,	4 cks.	Wilson, Sons, & Co., Ld.
Glucose—		
New York,	50 brls.	Hemmingway & Spear
"	50	
Hamburg,	4 cks.	Wilson, Sons, & Co., Ld.

Manure—		
Ghent,	340 bgs.	Wilson, Sons, & Co., Ld.
Mica—		
Hamburg,	2 cs.	
Paint—		
New York,	147 cs.	Wilson, Sons, & Co., Ld.
Phosphate—		
Dunkirk,	300 bgs.	Wilson, Sons, & Co., Ld.
Pitch—		
Antwerp,	22 cks.	Bailey & Leatham
Potash—		
Antwerp,	60 pks. 9 brls.	Wilson, Sons, & Co., Ld.
Pumice Stone—		
Messina,	4 cs. 100 bgs.	
Leghorn,	22 pks.	Wilson, Sons, & Co., Ld.
Rosin—		
Rotterdam,	13 bls.	Wilson, Sons, & Co., Ld.
Salt—		
Rotterdam,	200 bgs.	Wilson, Sons, & Co., Ld.
Saltpetre—		
Rotterdam,	135 bgs.	Wilson, Sons, & Co., Ld.
Hamburg,	1	"
Soap—		
Bari,	285 cs.	Wilson, Sons, & Co., Ld.
Naples,	19	"
"	37	"
Soda—		
Antwerp,	21 cks.	Wilson, Sons, & Co., Ld.
Starch—		
Rotterdam,	20 cs.	Hutchinson & Son
Bremen,	1,768	Veltmann & Co.
Stearine—		
Antwerp,	20 bgs.	Wilson, Sons, & Co., Ld.
Sulphur—		
Catania,	717 pkgs. 200 bgs.	Wilson, Sons, & Co., Ld.
"	50 t.	
Tar—		
Marseilles,	10 cks.	
Treacle—		
New York,	1,173 brls.	Wilson, Sons, & Co., Ld.
Ultramarine—		
Bremen,	16 cks.	
Varnish—		
New York,	4 brls.	Wilson, Sons, & Co., Ld.
Hamburg,	2 cs.	G. J. Gley
Waste Salt—		
Hamburg,	204 bgs.	Wilson, Sons, & Co., Ld.
White Lead—		
Rotterdam,	73 cks.	Hutchinson & Son
Antwerp,	31	Bailey & Leatham
Rotterdam,	16	W. & C. L. Ringrose
Wood Pulp—		
Helsingfors,	30 bls.	J. Good & Sons
"	218	Furley & Co.
"	285	
Zinc Oxide—		
Antwerp,	50 cks.	Bailey & Leatham
Zinc White—		
Amsterdam,	1 ck.	W. & C. L. Ringrose

GLASGOW.

Week ending March 8th.

Acetate of Lime—		
Philadelphia,	683 bgs.	
New York,	1,261	
Aniline—		
Rotterdam,	3 bxs.	J. Rankine & Son
Aniline Dyes—		
Antwerp,	1 ck.	
Arachide Oil—		
Rotterdam,	2 cks.	J. Rankine & Son
Barium Chloride—		
Rotterdam,	4 cks.	J. Rankine & Son

Barium Sulphate—		
Antwerp,	62 cks.	
Carbonic Acid Gas—		
Rotterdam,	15 tubes	J. Rankine & Son
Castor Oil—		
Antwerp,	114 cks.	
Chemicals (otherwise undescribed)		
Hamburg,	5 cs.	
Colours—		
Hamburg,	5 cks.	
Rotterdam,	6	1 cs. J. Rankine & Son
"	29 pkgs.	
Cottonseed Oil—		
New York,	170 brls.	
Rotterdam,	100	J. Rankine & Son
Dyestuffs—		
Alizarine		
Rotterdam,	84 cks.	J. Rankine & Son
"	214 pkgs.	
Argols		
Bordeaux,	121 cks.	
Extracts		
Philadelphia,	50 brls.	
Indigo		
Amsterdam,	8 chts.	
Farina—		
Hamburg,	100 bgs.	
Glucose—		
New York,	600 brls.	
Lead Acetate—		
Hamburg,	12 cks.	
Paint—		
New York,	3 brls.	
Phosphate—		
Dunkirk,	1,000 bgs.	
Ghent,	6,578	
Pitch—		
Antwerp,	8 cks.	
Rosin—		
New York,	3,616 brls.	
Soap—		
Rotterdam,	4 cs.	J. Rankine & Son
Sodium Acetate—		
Antwerp,	13 cks.	
Sodium Salicylate—		
Rotterdam,	2 cs.	J. Rankine & Son
Sodium Stannate—		
Hamburg,	2 cks.	
Sodium Sulphate—		
Antwerp,	25 cks.	
Starch—		
Antwerp,	5 cks. 8 cs.	
Amsterdam,	8 bxs.	
Stearine—		
Rotterdam,	17 cks.	J. Rankine & Son
Tallow—		
Philadelphia,	5 tcs.	
New York,	110	
Tartar—		
Bordeaux,	18 cks.	
Tartar Emetic—		
Hamburg,	2 cks.	
Treacle—		
New York,	750 brls.	
Philadelphia,	1,105	
Ultramarine—		
Rotterdam,	5 cs.	J. Rankine & Son
Yarnish—		
New York,	130 brls.	
White Lead—		
Rotterdam,	27 cks.	J. Rankine & Son
Wood Pulp—		
Christiania,	198 bls.	
Christiansand,	160	
Zinc Oxide—		
Antwerp,	25 cks.	
Zinc White—		
Rotterdam,	100 cks.	J. Rankine & Son
Hamburg,	20	

TYNE.

Week ending March 2nd.

Ammonia—		
Antwerp,	4 brls.	Tyne S. S. Co.
Barytes—		
Antwerp,	400 bgs.	Tyne S. S. Co.

Cod Oil—		
Bergen,	10 brls.	
Colours—		
Antwerp,	1 ck.	Tyne S. S. Co.
Paint—		
Laurvig,	40 pkgs.	
Plumbago—		
Naples,	102 bgs.	
Pumice Stone—		
Naples,	17 bgs. 5 cks.	
Pyrites—		
Huelva,	1,623 t.	Son
Starch—		
Antwerp,	146 bxs. 40 cs.	S. S.
Ultramarine—		
Rotterdam,	2 cs.	Tyne S. S. Co.
Wood Pulp—		
Christiania,	80 bls.	
Antwerp,	27	Tyne S. S. Co.
Zinc Oxide—		
Antwerp,	30 brls.	Tyne S. S. Co.

GOOLE.

Week ending February 27th.

Alkali—		
Calais,	10 cks.	
Hamburg,	10	
Antimony—		
Boulogne,	2 cks.	
Barytes—		
Antwerp,	100 bgs.	
Colours—		
Hamburg,	3 cks.	
Dyestuffs—		
Alizarine		
Rotterdam,	224 pkgs.	
Extracts		
Ghent,	40 cks.	
Logwood		
Belize,	350 t.	
Dyestuffs (otherwise undescribed)		
Rotterdam,	210 pkgs.	
Boulogne,	9	17 cs. 60 bls.
Farina—		
Antwerp,	3 bgs.	
Hamburg,	500	
Glucose—		
Calais,	200 bgs.	
Dunkirk,	100	
Potash—		
Dunkirk,	40 cks. 130 bgs.	
Calais,	40	
Rotterdam,	38	
Rosin—		
Bayonne,	1,758 bls.	
Savannah,	2,719	
Saltpetre—		
Rotterdam,	235 bgs.	
Hamburg,	3 cks. 10 bgs.	
Sodium Silicate—		
Rotterdam,	4 cks.	
Starch—		
Rotterdam,	10 cs.	
Zinc Oxide—		
Rotterdam,	7 brls.	
Antwerp,	43 cks.	
Zinc White—		
Hamburg,	40 cks.	

GRIMSBY.

Week ending March 2nd.

Aniline Dyes—		
Hamburg,	20 pkgs.	
Antwerp,	41	
Caoutchouc—		
Hamburg,	8 pkgs.	
Chemicals (otherwise undescribed)		
Hamburg,	20 cs. 17 pkgs.	
Colours—		
Antwerp,	15 cks. 17 pkgs.	
Rotterdam,	2	15
Hamburg,	5	21
Farina—		
Hamburg,	20 bgs.	
Saltpetre—		
Antwerp,	170 pkgs.	
Zinc Ashes—		
Antwerp,	18 cks.	

EXPORTS OF CHEMICAL PRODUCTS

OF
THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON. <i>ending March 6th.</i>			Sydney, 5 78	Alexandria, 1 37	Baltimore, 10 12 3 460
			Cream of Tartar—	Patras, 6 12	New York, 8 5 2 354
			Algoa Bay, 2 c. 66	Genoa, 1 10 3 q. 41	San Francisco, 1 19 3 90
1 t. 18 c. 632			Adelaide, 10 32	Leghorn, 1 3 2 46	Barcelona, 2 9 3 31
7 cs. 18			Bundaberg, 5 17	Marseilles, 12 21	Hamburg, 2 2 3 102
			Disinfectants—	Ammonium Sulphate—	Castor Oil—
2 t. 14 c. 66			Bombay, 7 pkgs. 34	Valencia, 164 t. 14 c. 2 q. 1,901	Valparaiso, 7 cs. 5
(Liquid)—			Calcutta, 122 131	Las Palmas, 33 11 2 419	Gibraltar, 5
1 t. 4 c. 683			Pt. Elizabeth, 38 25	Samarang, 50 575	Caustic Potash—
m Carbonate—			Hydrofluoric Acid—	Tagal, 30 345	Newport News, 3 t. 16 c. 696
m Chloride—			E. London, 3 cs. 20	Pekalongan, 60 690	Sydney, 2 11 69
ople, 2 t. 10 c. 693			Manure—	Genoa, 20 5 235	N'castle, NSW, 3 4 70
1 6 12			Gothenburg, 147 t. 15 c. 6380	New York, 49 17 534	Caustic Soda—
m Sulphate—			Bordeaux, 58 205	Venice, 8 1 89	Acacutla, 35 dms. 15
100 t. 1,150			New York, 20 170	Rio de Janeiro, 1 16 8	Alicante, 15
100 1,150			Las Palmas, 20 88	Teneriffe, 3 35	Barcelona, 170
100 1,165			Rouen, 317 18 1,635	Portland, M., 5 4 3 58	Bilbao, 30
litate—			Roscoff, 101 10 32	Barcelona, 10 9 128	Bourgas, 12
6 t. 6 c. 6109			Calicut, 5 22	Asbestos—	Brisbane, 40
of Lime—			Phosphorus—	Pernambuco, 1 cs. 1	Cartagena, Sp., 60 pkgs.
2 t. 5 c. 642			Las Palmas, 1 c. 612	Rio de Janeiro, 1	Ceara, 30
4 63			Potassium Chlorate—	Para, 2	Detroit, 50
Powder—			Gothenburg, 5 kgs. 613	Barium Chlorate—	E. London, 2 cs. 2
11 t. 7 c. 6150			Potassium Iodide—	Carril, 2 c. 610	Galatz, 244
1 tank 648			Shanghai, 1 cs. 617	Barium Hydrate—	Hamburg, 145
11 c. 12			Potassium Prussiate—	Havre, 4 cks. 610	Manaos, 45
Acid Gas—			Jamaica, 12 cks. 6356	Bleaching Powder—	Marseilles, 120
5 cs. 629			Sal Acetos—	Baltimore, 122 cks. 610	Montreal, 20 bxs. 100
sulphide—			Trepport, 1 t. 4 c. 645	Boston, 340 220 cs. 610	N. Orleans, 100
2 t. 10 c. 650			Saltetre—	Calcutta, 18	Newport News, 925 25 30 brl
oda—			Sydney, 4 t. 10 c. 6105	Dunkirk, 18	New York, 505
6 c. 611			Rio de Janeiro, 7 17 195	Newport News, 167	Pernambuco, 32
6 6			Bahia, 5 14 132	New York, 472	Philadelphia, 115
(otherwise undes.)—			Sheep Dip—	Pasages, 2	Rotterdam, 16
6 t. 18 c. 662			Jamaica, 25 drs. 610	Philadelphia, 171	Rouen, 102
19 pkgs. 78			B. Ayres, 6 t. 6 c. 240	Seville, 11	Seville, 31
75 brls. 52			Soda—	Varna, 10	Sydney, 110 5
7 c. 644			Port Alegre, 1 t. 12 c. 610	Bombay, 10 50 brls.	Yokohama, 89
5 31			Singapore, 18 3	Colon, 53	Alexandria, 12
1 t. 63			Alexandria, 5 16	Ghent, 139 10	Beyrout, 30
5 16			Soda Ash—	Halifax, 24	Callao, 50
10 70			Auckland, 5 t. 3 c. 622	Lisbon, 24 22 pkgs.	Carupano, 12
5 cs. 3 48			Soda Crystals—	M. Video, 6 27 brls.	Colon, 123
lucts—			Sydney, 10 t. 11 c. 621	Oporto, 6	Corfu, 30
30 cks. 6400			Demerara, 11 1	Rio de Janeiro, 15	Corral, 45
Dye 1 cs. 650			Sodium Bicarbonate—	Rouen, 15	Fiume, 150
36 brls. 698			Algoa Bay, 8 c. 65	San Sebastian, 29	La Guayra, 10
18 pps 39 pkgs. 432			Wellington, 5 8	Borax—	Las Palmas, 3
40 cs. 652			Tangiers, 1 t. 7	New York, 16 c. 3 q. 618	Lisbon, 6
40 dms. 250			Colombo, 1 4 8	Tampico, 1 t. 20	Melbourne, 124
26 cks. 140			Sulphate of Lime—	Hamburg, 10 7 207	Naples, 60
14 drs. 12			New York, 10 kgs. 6120	St. John, N.B., 1 6 2 24	N. Orleans, 35
1 cs. 64			Sulphur—	Sydney, 2 8 1 50	Newport News, 250
10 dms. 8			Trinidad, 1 t. 2 c. 610	Barcelona, 9 16 3 180	Piraeus, 25
25 brls. 65			Sulphuric Acid—	Sydney, 2 10 3 180	Rio de Janeiro, 10
aline qty. 63			Malta, 10 cs. 615	Venice, 2 10 3 180	Talcabano, 30
118 bgs. 71			Superphosphate—	Genoa, 4 5 3 87	Tampico, 4
88 cks. 110			Cherbourg, 245 t. 6735	Rotterdam, 6 7 143	Trieste, 30
665 t. 1,000			Barbadoes, 100 300	Calcium Chloride—	Vera Cruz, 90
400 brls. 145			Tartaric Acid—	Sydney, 20 t. 655	Volo, 20
24 500			Bombay, 3 c. 614	Candles—	Chemicals (otherwise undescribed)
775 500			Sydney, 5 23	Bathurst, 50 cs. 615	Trieste, 2 t. 678
28 cks. 6166			Adelaide, 1 t. 91	Bombay, 675	Alexandria, 12 c. 678
6 tks. 645			LIVERPOOL.	Cadiz, 150	Barcelona, 3 111
10 brls. 11			<i>Week ending March 6th.</i>	Cape Town, 100 100 bxs.	Tunis, 6 11
4 100 dms. 100			Acetic Acid—	Cartagena, N.C., 4	Boston, 5 5 430
200 100			Lisbon, 1 t. 3 q. 69	Ceara, 115	Yokohama, 10 397
50 13			Alum—	Eten, 125	Rio de Janeiro, 1 1 cs. 30
12 cks. 97			Portland, M., 1 t. 7 c. 3 q. 68	Halifax, 125	Alexandria, 1 16 c. 62
110 cks. 6700			Sydney, 1 7	Larache, 542	Bombay, 1 6 12
lucts (otherwise undes.)—			Rio de Janeiro, 1 18 9	Las Palmas, 70	Lagos, 8 15
2 brls. 67			Talcabano, 2 18 2 13	Shanghai, 370	China Clay—
sulphate—			Aleppo, 3 14 1 17	Sierra Leone, 5	Bombay, 878 t. 15
10 t. 5 c. 6160			San Francisco, 10 10 2 48	Victoria, B.C., 570	Genoa, 13 3 c. 69
5 3 90			St. John's, N.B., 5 3 2	Akassa, 75	Philadelphia, 69
49 630			Alumina Sulphate—	Calcutta, 1,061	Portland, 100
			Portland, M., 10 t. 12 c. 658	Colon, 6	Chloride of Lime—
			Tampico, 5 2	Gibraltar, 27	Gd. Canary, 11 c. 2 q. 67
			Ammonia—	Guayaquil, 16	Citric Acid—
			Pernambuco, 6 c. 1 q. 622	Lagos, 32	Corunna, 2 c. 61
			Ceara, 1 5	Lisbon, 350	Genoa, 6 3
			Ammonium Carbonate—	Mazagan, 200	Coal Products—
			Valparaiso, 3 t. 9 c. 1 q. 618	New York, 50	Alizarine
			Naples, 12 18	Pt Elizabeth, 160	Lisbon, 1 ck.
			Ceara, 3 3 5	Rangoon, 575	Alizarine Oil
			Rio Grande do Norte, 6 15	Teneriffe, 252	Rio de Janeiro, 8 brls.
			Bilbao, 1 35	Caoutchouc—	Aniline
			Lisbon, 3 5	Rangoon, 2 cs. 6	Shanghai, 25 cs.
			Leghorn, 2 5 74	Valparaiso, 1	Aniline Colours
			Marseilles, 2 5 10	Valparaiso, 1	Boston, 8 cks. 2 cs.
			Ammonium Chloride—	Ceara, 3	Halifax, 1
			Salonica, 2 t. 1 c. 635	Rouen, 2 t. 4 c. 6116	Calcutta, 1

Pitch			
Cette, 1,428 t.			
Akassa, 10 brls.			
Tar			
Billao, 2 dms.			
Santos, 16 brls.			
Tar Salts			
New York, 1 t. 19 c. 1 q.	£60		
Cobalt Oxide—			
Rotterdam, 2 c.	£50		
Nagasaki, 2	57		
Copperas—			
Sydney, 5 t. 9 c. 3 q.	£8		
St. John, N.B., 14 2 1 ros.			
" N.F., 4	20		
Copper Sulphate—			
Bordeaux, 254 t. 9 c. 1 q.	£3,927		
Rouen, 147 12 3	2,254		
Cette, 175 8	2,728		
Leghorn, 69 8 1	1,055		
Ancona, 62 13 3	957		
Genoa, 62 2 1	983		
Marseilles, 56 19 2	893		
Naples, 55 19 2	785		
Barcelona, 30 3	469		
Messina, 27 2 2	392		
Bari, 46 4 2	664		
Brindisi, 15 2 2	311		
Seville, 23 4 3	206		
B. Ayres, 6 1	90		
Trieste, 5 3 1	79		
Tarragona, 5 2 2	78		
M. Video, 5	78		
Oran, 4 3	62		
Algiers, 3 9 3	62		
Odessa, 2 19 3	44		
Galatz, 2	30		
Patras, 2	30		
Varna, 1 15	27		
Constantinople, 1 12 2	25		
Aleppo, 1 13 1	29		
Bourgas, 1 9 1	21		
Santos, 10	7		
St. John, N.B., 6 3	6		
Vera Cruz, 2	1		
Disinfectants—			
M. Video, 4 cs.			
Bombay, 1 t.	£10		
Calcutta, 2 10 c.	40		
B. Ayres, 8	2 q. 5		
Colombo, 6 cks. 1 cs. 5 dms.	17		
Farina—			
Rio de Janeiro, 20 bgs.			
Hypsulphite—			
Pacamay, 30 kgs.			
Iron Oxide—			
Antwerp, 19 c. 2 q.	£19		
Havre, 2 t.	6		
Lamp Black—			
Guantanamo, 2 cks.			
Lead Carbonate—			
Lisbon, 7 c.	£7		
Lime—			
C. C. Castle, 12 cks.			
Gd. Popo, 5 t.			
Pernambuco, 20 pns.			
Lagos, 5 10 c.			
Little Popo, 3 5			
Magnesia—			
Rio de Janeiro, 1 cs.			
Tampico, 1			
Magnesium—			
Rangoon, 3 cs.			
Magnesium Chloride—			
Rouen, 9 t. 19 c. 2 q.	£24		
Magnesium Sulphate			
Havre, 40 bgs.			
Rouen, 10 brls.			
Manure—			
Honolulu, 30 t.	£630		
Venice, 9 17 c.	47		
Cherbourg, 552 12 3 q.	1,752		
Valencia, 100	240		
Cullera, 200	480		
Genoa, 106 5	343		
Las Palmas, 9	58		
Patat—			
Cape Town, 5 pks.			
Cartagena, N.G., 2 kgs. 5 dms.			
Esquimaux, 40			
Gibraltar, 13 40			
Guantanamo, 2 cks.			
Havre, 5			
Hong Kong, 1 23			
La Guayra, 20			
Maranham, 3 10			
Matanzas, 3			
M. Video, 22 cs.			
N. Orleans, 2			
Old Calabar, 6			
Sagua la Grande, 2			
Santiago, 2			
Valparaiso, 40 50 brls.			

Vancouver, 4 40 10 dms.			
Victoria, B.C., 5 brls.	100		
Amapala, 11 cs.			
Bahia, 100			
Calcutta, 4 cks.			
Callao, 50 5 12			
Gd. Bassam, 10			
La Union, 1			
Loanda, 6 65			
Monrovia, 3			
New York, 2			
Para, 23			
Santander, 45			
Santiago de Cuba, 2			
Sierra Leone, 60			
Trieste, 10			
Painters' Colours—			
Bahia, 40 kgs. 9 cs.			
Baltimore, 260 cks.			
Bombay, 690 30 dms. 52			
B. Ayres, 100			
Calcutta, 2 cks.			
Carrizal, 90			
Cienfuegos, 40			
Galatz, 2 tcs.			
Honolulu, 23			
Lisbon, 39 1 2			
Manaos, 5 2			
New York, 1			
Syria, 2 brls.			
Boston, 6			
Cartagena, N.G., 85			
Genoa, 2 bxs.			
Havana, 7			
La Plata, 25			
New York, 28 6			
Para, 22 brls. 96			
Philadelphia, 10 dms.			
Valparaiso, 2			
Phosphate of Lime—			
New York, 19 c.	£13		
Phosphorus—			
Higo, 5 c.	£50		
Kobe, 6	60		
Shanghai, 15	150		
Tampico, 2	20		
Potashes—			
M. Video, 5 t.	£160		
B. Ayres, 16 c.	19		
Potassium Bicarbonate—			
Leghorn, 1 t. 1 c. 3 q.	£27		
Potassium Bichromate—			
Tampico, 5 c.	£17		
Potassium Carbonate—			
Newport News, 3 t. 1 c.	£61		
Potassium Chlorate—			
Leghorn, 2 t. 5 c.	£126		
Copenhagen, 1 5	78		
Melbourne, 1	54		
Oporto, 1	54		
Christiania, 1	47		
Hamburg, 10	24		
Tampico, 4	12		
M. Video, 1	99		
Sydney, 1	54		
Calcutta, 10	24		
Potassium Nitrate—			
Las Palmas, 12 c. 1 q.	£13		
Potassium Prussiate—			
Lisbon, 2 c. 1 q.	£10		
Potassium Sulphocyanide—			
Rio de Janeiro, 4 c.	£12		
Salt—			
Adjuah, 5 t.			
Alexandria, 50			
Antwerp, 280			
Axim, 10			
Benin, 32			
Cabenda, 16 1 c.			
Calcutta, 4,976			
Cameroons, 16 14			
Christiania, 2 10			
Conakry, 5 7			
Drewin, 5			
Ghent, 385			
Gd. Bassam, 50			
Landana, 12 10			
Matadi, 25			
Melbourne, 150			
N. Orleans, 165			
Newport News, 556 16			
New York, 109			
Palermo, 5 fms. 2 cs.			
Para, 35			
Portland, Me., 112 10			
Rio de Janeiro, 2 5			
Rouen, 40			
St. John's, N'fd., 5			
Ukaka, 13 15			
Adelaide, 14			
Akassa, 281			
Boston, 100			
Cape Palmas, 24			
Faroe Islands, 182			

Gd. Bassa, 14 15			
Lagos, 100			
Loango, 20 10			
M. Video, 10 19			
Port Royal, 1,250			
Sapelli, 31 5			
Sierra Leone, 85 18			
Vancouver, 33			
Salt Cake—			
Baltimore, 267 t.	£417		
Philadelphia, 157 236			
Newport News, 146 8 c.	105		
Saltpetre—			
Cartagena, N.G., 3 t.	£71		
Rio de Janeiro, 17 c. 3 q.	21		
Manaos, 2	48		
Sheep Dip—			
M. Video, 3 cs.			
Durban, 310 dms.	12 c. 2 q. £15		
Soap—			
Algoa Bay, 50 bxs.			
Barbadoes, 150			
Batavia, 5			
Bayin, 50			
Belize, 500			
Benin, 250			
Bombay, 655 16 cs.			
Cape Town, 710			
Gibraltar, 260 20			
Kingston, Jam., 116			
Melilla, 20			
New York, 920			
Trinidad, 750 1			
Victoria, B.C., 240			
Aden, 125 bds. 60 dms.			
Akassa, 5			
Calcutta, 10 2			
Callao, 10			
C. C. Castle, 30			
E. London, 200			
Gd. Bassa, 80			
Gd. Canary, 1,160			
Halifax, 200			
Hamburg, 25			
Havre, 450			
Kurrachee, 1,110 5			
Las Palmas, 80			
Madras, 35			
Malta, 20			
Manaos, 500			
Mauritius, 180			
N. Orleans, 350			
Para, 200			
Philadelphia, 20			
Piraeus, 8			
Pt. Elizabeth, 250			
Portland, 600			
Pt. Natal, 400			
Pt. Said, 40			
Quittah, 50			
Rangoon, 500 18			
St. Lucia, 302			
St. Thomas, 1			
Sierra Leone, 240			
Singapore, 1,580 10			
Teneriffe, 300			
Trinidad, 4			
Valparaiso, 250			
Warri, 250			
Soda Alkali—			
Adelaide, 44 cks.			
Alicante, 85 brls.			
Boston, 40 2 dms.			
Brisbane, 8			
Galatz, 3 40			
Malta, 11 40			
Melbourne, 40 40 2			
N'castle, N.S.W., 40 40			
Piraeus, 27 40			
Sydney, 20 33			
Terneuzen, 33			
Soda Ash—			
Barcelona, 65 cks.			
Bombay, 34			
Calcutta, 168 33 brls.			
Ceara, 15			
Cheribon, 8			
Genoa, 350 bgs			
Newport News, 35			
Philadelphia, 4,520 614 tcs.			
Piraeus, 20			
Talcahuano, 20			
Valparaiso, 70			
Baltimore, 566 4,702 203			
Boston, 104			
Calcutta, 100			
Callao, 25			
Constantinople, 100			
Copenhagen, 25			
Lisbon, 75			
New York, 184 8,717 325			
Odessa, 18			
Oporto, 12			

Rio de Janeiro,	250	
Rotterdam,		440
Seville,		100
Smyrna,	100	
Soda Crystals—		
Philadelphia,	50 cks.	
St. John's, N'fd.,		70 brls.
Valparaiso,		200
Varna,		8
Boston,		200
Cape Town,		30 10
Constantinople,		50
Malta,	50	
New York,		140
St. John's, N.B.,		100
Toronto,		25
Sodium Aluminate—		
Lisbon,	1 cks.	
Sodium Bicarbonate—		
Alexandretta,	10 kgs.	
Bari,	60	4 cks.
Bombay,	325	
Bordeaux,	45	
Calcutta,	645	
Constantinople,	30	30
Copenhagen,	20	
Marseilles,	31	7
New York,	200	30
Odessa,	600	
Patras,	60	
Philadelphia,		210
Rouen,	20	75 kgs. 30
S. John's, N'fd.,		300
Smyrna,	20	
Valparaiso,	250	
Varna,	10	5
Cairo,	20	15
Cartagena, N.G.,		4 cks.
6. John's, N.B.,	520	
Seville,	50	1
Sodium Carbonate—		
Seville,	554 dms.	149 10
Sodium Chlorate—		
Hamburg,	110 kgs.	
Ghent,	12 cks.	
Sodium Nitrate—		
Samarang,	20 bgs.	
Sodium Silicate—		
Rouen,	11 brls.	51 kgs.
Seville,	70	
Sodium Tartrate—		
M. Video,	5 dms.	1 cks.
Stearine—		
New York,	120 bgs.	24 cks.
Sulphur—		
Halifax,	1 t.	17 c. 24
Boston,	140	1
Bombay,	1	10
Victoria, B. C.,	25	1
Calcutta,	15	4
Manaos,		4
Superphosphate—		
Valencia,	25 t.	
Tartaric Acid—		
Rio de Janeiro,		3 c.
Treacle—		
Antwerp,	15 cks.	16 kgs.
Terneuzen,	10 tcs.	
Turpentine—		
Mollendo,		1 c. 14
Lagos,	28 dms.	
Las Palmas,	8	
Yarnish—		
Bombay,	25 dms.	14
Calcutta,		1 ct.
Carrizal,	10	
Genoa,		1 cks.
Lisbon,		1
M. Video,		20
Old Calabar,	5 cks.	
Tocopilla,	1	
Gd. Bassam,	1	
Hamburg,	1	
Havana,	5	
Rio de Janeiro,	2	
Valparaiso,	8	
White Lead—		
Parnahyba,	10 cks.	
Tocopilla,		qrs.
Vera Cruz,	6 kgs.	
Whiting—		
Victoria, B. C.,	3 kgs.	
Zinc Sulphate—		
Maranham,		72. 34
Zinc White—		
Rotterdam,	17 brls.	

MANCHESTER
Week ending March 7th

Aluminium—
Antwerp, 1 ba.

Alta —	
3 pns.	
6 cks.	
1 ck.	
20 cs.	
Acid —	
1 cs.	
4 cks.	
(otherwise undescribed)	
20 kgs.	
12 cks.	
Oil —	
22 brls.	
200 t.	
Bicarbonate —	
8 cks.	
5 cs.	
Sulphate —	
100 bgs.	
11 cks.	
10 dms.	

HULL.

Week ending March 2nd.

San Francisco, 188 cks.	
Ammonium Sulphate —	
San Francisco, 86 bgs.	
San Francisco, 450	
San Francisco, 192	
San Francisco, 453	
Soda —	
San Francisco, 1 cs. 5 cks.	
Sulphate —	
San Francisco, 44 dms.	
Alta (otherwise undescribed)	
San Francisco, 3 cks.	
San Francisco, 1 cs.	
San Francisco, 6 21 1,893 silbs.	
San Francisco, 9 4 15 pkgs.	
San Francisco, 8 276 1	
Seed Oil —	
San Francisco, 834 c.	
San Francisco, 223	
San Francisco, 3,900	
San Francisco, 1,105	
Alta (otherwise undescribed)	
San Francisco, 112 cks.	
San Francisco, 28	
Ed Oil —	
San Francisco, 436 c.	
San Francisco, 109	
San Francisco, 67	
San Francisco, 35	
Al White —	
San Francisco, 10 bgs.	
Alta —	
San Francisco, 10 cks.	
San Francisco, 4 cks.	
Alta Colours —	
San Francisco, 47 cks. 92 dms.	
San Francisco, 19	
San Francisco, 4	
San Francisco, 1 20 64 pkgs.	
San Francisco, 1 20 96 pks.	
San Francisco, 3	
San Francisco, 12 50	
San Francisco, 4 cs. 36 2	
San Francisco, 195 90	
San Francisco, 1 5	
San Francisco, 10	
Al White —	
San Francisco, 229 cks.	
Alta —	
San Francisco, 46 cs.	
San Francisco, 648 t.	
San Francisco, 191	
San Francisco, 17 cs.	
San Francisco, 32 cs.	
San Francisco, 47 tcs.	

Tar —	
Antwerp, 2 cks.	
Bergen, 10	
Rotterdam, 5	
Varnish —	
Antwerp, 1 ck.	
Harlingen, 1	
Rouen, 1 cs.	
Whiting —	
San Francisco, 170 cks.	

GLASGOW.

Week ending March 7th.

Acids —	
Bombay, 7 t. 19 c.	
Ammonium Sulphate —	
Demerara, 281 t. 4 c.	
Trinidad, 2 6½	
Valencia, 172 15½	
Bleaching Powder —	
Sydney, 9 t. 18¾ c.	
Valparaiso, 17	
India, 92 5	
Borax —	
Melbourne, 1 t. 1½ c.	
Candles —	
Cape Town, 12,500 lbs.	
Carbolic Acid —	
Napier, 44	
Caustic Soda —	
Dunedin, 5 t. 8¾ c.	
Chloride of Lime —	
U.S.A., 5 t. 8¾ c.	
Coal Products —	
Grease Oil	
Christiania, 419	
Naphtha	
Dunedin, 200 glns.	
Havre, 37 t. 13¾ c.	
Rouen, 21 6½	
Pitch	
France, 697 t. 4 c.	
India, 100 cks.	
Amsterdam, 243	
Havre, 400	
Coronel, 503 brls.	
U.S.A., 270	
Bombay, 358	
Calcutta, 25 24 rnlts	
Madras, 45	
Tar	
U.S.A., 47 t. 14 c.	
Bombay, 144 rnlts.	
Calcutta, 198	
Canada, 200 brls.	
Colombo, 20 cks.	
Karachi, 100 20	
Madras, 65	
Cod Oil —	
Invercargill, 432	
Melbourne, 32	
Copperas —	
Bombay, 18 t. 15 c.	
Copper Sulphate —	
Nantes, 53 t. 7¾ c.	
Dried Blood —	
Nantes, 15 t.	
Dyestuffs —	
Extracts	
Sydney, 2 t. 10½ c.	
Logwood	
Pt. Lyttelton, 5 t. 4¾ c.	
Wellington, 1 3½	
Dunedin, 13 5	
Farina —	
Rio de Janeiro, 2 t. 4¾ c.	
Rouen, 1 4¾	
Glucose —	
Algoa Bay, 12 c.	
Lead Acetate —	
Bombay, 4 t. ¾ c.	
Linseed Oil —	
B. Ayres, 4 t. ¾ c.	
Dunedin, 2 2	
Napier, 2 1½	
Sydney, 2 2½	
Melbourne, 1 10¾	
Litharge —	
Bombay, 5 t. 18 c.	
Magnesium Sulphate —	
Rio de Janeiro, 9 t. 6¾ c.	
Manganese Oxide —	
U.S.A., 14 t. 17 c.	
Manure —	
Trinidad, 62 t. 11 c.	
Valencia, 117 6¾	
Nitrate of Lead —	
U.S.A., 2 t. 6 c.	

Paint —	
Dunedin, 681	
Havana, 97	
Valparaiso, 421	
Adelaide, 59	
Bombay, 30	
Calcutta, 200	
Colombo, 33	
Sydney, 24	
Natal, 132	
Rotterdam, 4	
Melbourne, 35	

Painters' Colours—

Auckland, 661	
Bombay, 119	
Dunedin, 243	
Invercargill, 168	
Wellington, 22	
Sydney, 254	
Calcutta, 40	
Karachi, 29	

Paraffin Wax—

Bilbao, 6 t. 1 c.	
Bordeaux, 13 5¾	
India, 4 9¾	

Potassium Bichromate—

Bombay, 7 c.	
India, 2 t. 1	
U.S.A., 14¾	
Antwerp, 10 ¾	
Rouen, 9 19¾	
Barcelona, 2 1	
Paris, 15 ¾	

Potassium Prussiate—

New York, 9 t. ¾ c.	
Rouen, 10¾	

Rosin—

India, 6194	
-------------	--

Sheep Dip—

B. Ayres, 2 t. 12 c.	
Dunedin, 1 10	

Soap—

Trinidad, 6 t. 5 c.	
Barbadoes, 1 2½	
Jamaica, 1 7	
U.S.A., 25	

Soda Ash—

U.S.A., 18 t. 15¾ c.	
----------------------	--

Sodium Bicarbonate—

Nantes, 5 t. 4¾ c.	
--------------------	--

Sodium Bichromate—

Bombay, 5 t. 14¾ c.	
Antwerp, 1 4	
Rouen, 5 5½	
Barcelona, 3 1¾	

Sodium Nitrate—

Trinidad, 3 t. 8¾ c.	
----------------------	--

Starch—

Rio de Janeiro, 2 t. 10¾ c.	
Sydney, 3 8	

Sulphuric Acid—

Bombay, 2 t. 14¾ c.	
Karachi, 112 10	

Superphosphate—

Trinidad, 10 t.	
Nantes, 25 1¾ c.	

Tallow—

Christiania, 11 c.	
--------------------	--

Treacle—

Christiania, 6 t. 1 c.	
------------------------	--

Ultramarine—

India, 1 t. 1 c.	
------------------	--

Yarnish—

Sydney, 628	
-------------	--

White Lead—

Dunedin, 6 t.	
Napier, 1	
Sydney, 23 17 c.	
Auckland, 5 15	

TYNE.

Week ending March 2nd.

Alkali —	
Rotterdam, 2 t. 3 c.	
Gothenburg, 10 6	
Ammonium Sulphate —	
Stavanger, 10 t.	
Antimony —	
Antwerp, 1 t.	
Arsenic —	
Gothenburg, 1 t. 9 c.	
Barcelona, 1 10	
Barium —	
Antwerp, 10 t. 2 c.	
Barytes —	
Copenhagen, 10 c.	

Blanc Fixe—

Barcelona, 15 c.	
------------------	--

Bleaching Powder—

Lisbon, 12 t.	
---------------	--

Christiania, 2 15 c.	
----------------------	--

Rotterdam, 8 2	
----------------	--

Copenhagen, 5 18	
------------------	--

Antwerp, 130 5	
----------------	--

Drontheim, 9 17	
-----------------	--

Gothenburg, 56 17	
-------------------	--

Carbonic Acid—

Esbjerg, 9 c.	
---------------	--

Caustic Soda—

Bilbao, 14 t.	
---------------	--

Antwerp, 22 13 c.	
-------------------	--

Drontheim, 2 18	
-----------------	--

Barcelona, 21 11	
------------------	--

Constantinople, 1	
-------------------	--

Gothenburg, 29 17	
-------------------	--

Chemicals (otherwise undes.)—

Carthage, 7 c.	
----------------	--

Litharge—

Gothenburg, 1 t. 2 c.	
-----------------------	--

Magnesia—

Antwerp, 3 c.	
---------------	--

Barcelona, 14 t. 5	
--------------------	--

Manure—

Valencia, 104 t. 15 c.	
------------------------	--

Salt—

Antwerp, 8 cs.	
----------------	--

Soda—

Lisbon, 10 t. 4 c.	
--------------------	--

Christiania, 12 11	
--------------------	--

Rotterdam, 7 2	
----------------	--

Trondhjem, 30 3	
-----------------	--

Antwerp, 28 2	
---------------	--

Gothenburg, 9 12	
------------------	--

Soda Ash—

Lisbon, 9 t. 19 c.	
--------------------	--

Antwerp, 5 9	
--------------	--

Bergen, 5 4	
-------------	--

Constantinople, 5 4	
---------------------	--

Gothenburg, 219 3	
-------------------	--

Sodium Silicate—

Barcelona, 10 t. 2 c.	
-----------------------	--

Sulphur—

Christiania, 100 t.	
---------------------	--

Christiansand, 50	
-------------------	--

Antwerp, 5	
------------	--

Gothenburg, 50	
----------------	--

White Lead—

Copenhagen, 5 c.	
------------------	--

GOOLE.

Week ending February 27th.

Benzol —	
Boulogne, 48 cks.	
Rotterdam, 167	
Chemicals (otherwise undescribed)	
Antwerp, 1 ck.	
Ghent, 1	
Rotterdam, 2	
Coal Products (otherwise undes.)—	
Boulogne, 2 cks.	
Ghent, 1	
Dyestuffs (otherwise undescribed)	
Ghent, 4 cks. 2 cs.	
Hamburg, 2 1	
Manure —	
Boulogne, 15 bgs.	
Ghent, 374	
Hamburg, 227	
Painters' Colours —	
Antwerp, 1 ck.	
Calais, 15 cs. 6 pkgs.	
Dunkirk, 4	
Hamburg, 2	
Rotterdam, 7 3	
Pitch —	
Antwerp, 734 t.	

GRIMSBY.

Week ending March 2nd.

Chemicals (otherwise undescribed)	
Antwerp, 5 cks.	
Dieppe, 1 11 pkgs.	
Hamburg, 10 cs.	
Naphtha —	
Hamburg, 1 cs. 2 btl.	
Painters' Colours —	
Antwerp, 1 cs.	
Rotterdam, 6 cks.	
Pitch —	
Antwerp, 50 cks.	
Tar —	
Dieppe, 107 cks.	

PRICES CURRENT.

WEDNESDAY, MARCH 15th, 1893.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

Acids:—

	£	s.	d.
Acetic, 25% and 40%	per cwt.	6/9	& 10/-
Glacial	"	41/6	
Arsenic S.G., 2000	"	0 15	0
Fluoric	per lb.	0 0	3 3/4
Muriatic (Tower Salts), 30° Tw.	per bottle	0 0	10
(Cylinder), 30° Tw.	"	0 3	0
Nitric 80° Tw.	per lb.	0 0	1 5/8
Nitrous	"	0 0	1 1/4
Oxalic	nett	0 0	3 3/4
Phosphoric, 1750°	"	0 0	11
Picric	"	0 0	10
Sulphuric (fuming 50%	per ton	15	10 0
(monohydrate)	"	5	10 0
(Pyrites, 168°)	"	3	0 0
(free from arsenic, 145°)	"	1	5 0
Sulphurous (solution) S.G. 1025	"	1	6 0
Tannic (pure)	per lb.	0 1	0
Tartaric	per ton	0 0	10 3/4
Arsenic, white powdered	nett	per ton	14 0 0
Alum (loose lump)	"	4	15 0
Alumina Sulphate (pure)	"	4	12 6
Aluminoferrous	"	2	7 6
Aluminium	per lb.	0 3	0
Ammonia, Anhydrous	"	0 1	4
" 880=28° B.	per lb.	0 0	3
" =24° B.	"	0 0	2 1/4
Carbonate	nett	0 0	3 3/4
Muriate	per ton	22	10 0
(sal-ammoniac) 1st & 2nd	per cwt.	39/-	& 37/-
Nitrate	per ton	40	0 0
Phosphate	per lb.	0 0	10 1/4
Sulphate (grey) London	per ton	11	2 6
(grey) Hull	"	11	2 6
Aniline Oil (pure)	per lb.	0 0	5 1/4
Aniline Salt	"	0 0	4 3/4
Antimony	per ton	31	15 0
(tartar emetic)	per lb.	0 0	7 3/4
(golden sulphide)	"	0 0	10
Barium Chloride	per ton	6	10 0
Carbonate (native)	"	3	5 0
Sulphate (native levigated)	"	45/-	to 75/-
Bleaching Powder, 35%	nett	"	7 2 6
Liquor, 7%	"	3	10 0
Bisulphide of Carbon	"	11	0 0
Chromium Acetate (crystal)	per lb.	0 0	6
Calcium Chloride	per ton	2	2 6
China Clay (at Runcorn) in bulk	"	15/-	to 30/-

Coal Tar Products and Dyes:—

Alizarine (artificial) 20%	net	per lb.	0 0 8
Magenta	"	0 3	9
Anthracene, 30% A, f.o.b. London	per unit	per cwt.	0 1 1
Benzol, 90% nominal	per gallon	0 1	1 1/2
50/90	"	0 1	1 1/2
Carbolic Acid (crystallised 40°)	per lb.	0 0	5 1/2
(crude 60°)	per gallon	0 1	6 1/2
Creosote (ordinary)	"	0 0	2
(filtered for Lucigen light)	"	0 0	2
Crude Naphtha 30% @ 120° C.	"	0 0	5
Grease Oils, 22° Tw.	per ton	2	10 0
Pitch, f.o.b. Liverpool or Garston	"	1	13 0
Solvent Naphtha, 90% at 160°	per gallon	0 1	2
Lucigen and "Wells" Oils	"	0 0	2 1/2
Copper	per ton	40	0 0
Sulphate	"	15	7 6
Oxide (copper scales)	"	39	0 0
Glycerine (crude)	"	16	10 0
(distilled S.G. 1250°)	"	45	0 0
Iodine	nett, per oz.	0 0	9
Iron Sulphate (copperas)	per ton	1	5 0
Sulphide (antimony slag)	"	2	0 0
Lead (sheet) for cash	"	10	15 0
Litharge Flake (ex ship)	"	13	5 0
Acetate (white)	"	24	10 0
brown	"	14	10 0
Carbonate (white lead) pure	"	16	0 0
Nitrate	"	18	15 0

Lime, Acetate (brown)	per ton	5	12 6
(grey)	"	8	10 0
Magnesium (ribbon and wire)	per oz.	0 3	3
Chloride (ex ship)	per ton	2	10 0
Carbonate	per cwt.	1	17 6
Hydrate	per ton	17	0 0
Sulphate (Epsom Salts)	per ton	3	0 0
Manganese, Sulphate	"	17	15 0
Borate	per cwt.	2	15 0
Ore, 70%	per ton	4	5 0
Methylated Spirit, 61° O.P.	per gallon	0 1	10
Naphtha (Wood), Solvent	"	0	3 0
Miscible, 60° O.P.	"	0	2 11
Oils:—			
Cotton-seed	per ton	15	0 0
Linseed	"	21	10 0
Petroleum, American	per gallon	0 0	5 1/4
Stearine	per ton	25	0 0
Phosphorus (yellow)	per lb.	0 2	2
(red)	"	0	2 8
Potassium (metal)	per oz.	0 3	7
Bichromate	nett	per lb.	0 0 4 3/4
Carbonate, 90% (ex ship)	per ton	17	5 0
Chlorate	per lb.	0 0	4 3/4
Cyanide, 98%	"	0	1 10
Hydrate (Caustic Potash) 80/85%	per ton	21	10 0
(Caustic Potash) 75/80%	"	20	0 0
(Caustic Potash) 70/75%	"	19	10 0
Nitrate (refined)	per cwt.	1	2 6
Permanganate	per cwt.	2	19 0
Prussiate Yellow	per lb.	0 0	9 1/2
Sulphate, 90% (ex ship)	per ton	9	15 0
Muriate, 80% (do.)	"	8	12 6
Silver (metal)	per oz.	0 2	1 1/2
Nitrate	"	0	2 10
Sodium (metal)	per lb.	0 2	0
Carb. (refined Soda-ash) 48%	nett	per ton	4 15 0
(Caustic Soda-ash) 48%	"	4	0 0
(Carb. Soda-ash) 48%	"	4	0 0
(Alkali) 58%	"	3	10 0
(Soda Crystals)	"	2	2 6
Acetate (ex-ship)	"	14	5 0
Arseniate, 45%	"	11	0 0
Chlorate	per lb.	0 0	6 1/4
Borate (Borax)	net, per ton	30	0 0
Bichromate	per lb.	0 0	3 1/4
Hydrate (77% Caustic Soda) (f.o.b.) net pr. ton	"	9	15 0
(74% Caustic Soda)	"	8	12 6
(70% Caustic Soda)	"	7	12 6
(60% Caustic Soda)	"	6	12 6
(60% Caustic Soda, cream) (f.o.b.)	"	6	10 0
Bicarbonate	"	6	10 0
Hyposulphite	"	5	10 0
Manganate, 30%	"	16	0 0
Nitrate (95%) ex-ship Liverpool	per cwt.	0	8 9
Nitrite, 98%	per ton	29	0 0
Phosphate	"	15	0 0
Silicate (glass)	per ton	5	2 8
(liquid, 100° Tw.)	"	4	5 0
Stannate, 40%	per cwt.	3	2 8
Sulphate (Salt-cake)	per ton	0	17 8
(Glauber's Salts)	"	1	5 0
Sulphide	"	8	0 0
Sulphite	"	5	3 0
Strontium Hydrate, 100%	"	8	10 0
Sulphocyanide Ammonium, 95%	per lb.	0 0	7
Barium, 95%	"	0	0 5
Potassium	"	0	0 7 1/2
Sulphur (Flowers)	per ton	7	5 0
(Roll Brimstone)	"	5	5 0
Brimstone: Best Quality	"	3	12 8
Superphosphate of Lime (26%	"	2	7 8
Tallow	"	24	0 0
Tin Crystals	per lb.	0 0	3 1/4
English Ingots	per ton	63	10 0
Zinc (Spelter)	"	13	12 8
Chloride (solution, 100° Tw.)	"	5	7 6

THE CHEMICAL TRADE JOURNAL

AND
OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

109.

SATURDAY, MARCH 23, 1895.

Vol. XVI.

Contents.

PAGE	PAGE
CS	189
ical Trades	190
randa	190
oxidation of Terpenes	191
al Oils	191
f Jottings	191
panies	192
onia Products	195
anure Material	196
Chemical Market	196
eral Market	196
The Metal Market	196
Liverpool Oil and Colour Market	196
West of Scotland Chemicals	197
Hull Paint, Oil, and Colour Report	197
Tyne Chemical Report	197
New Companies	197
The Patent List	198
Gazette Notices	198
Imports	198
Exports	201
Prices Current	204

ADVERTISEMENT.

JUST PUBLISHED.

ICAL ANALYSIS OF OILS, FATS, WAXES.

ICAL ANALYSIS of Oils, Fats, Waxes, the Commercial Products derived therefrom. From the German of BENEDIKT. Revised and Enlarged by Dr. J. LEWKOWITZSCH, F.I.C., Chemical Manager at the White-hall Soap Works, Leeds; Consulting Chemical Engineer. 8vo., 21s. nett. Macmillan and Co., London.

ED Spent Oxide for Vitriol Making—must be dry.—Apply, "Oxide," *Chemical Trade Journal*, Manchester.

Notices.

Communications for the *Chemical Trade Journal* should be sent by Post Office Orders made payable to—**DAVIS BROS., 32, Blackfriars Street, MANCHESTER.**

Our Registered Telegraphic Address is—

"Expert, Manchester."

Terms of Subscription, commencing at any date, to the *Trade Journal*,—payable in advance,—including postage of the world, are as follows:—

Half-yearly (52 numbers) 12s. 6d.
Yearly (26 numbers) 6s. 6d.
Quarterly (13 numbers) 3s. 6d.

Subscribers will oblige by making their remittances for subscriptions by Post Office Order, crossed and payable to "Davis Bros."

Communications for the Editor, if intended for insertion in the *Journal's* issue, should reach the office not later than **Tuesday**.

Advertisements.

Advertisements of Situations Vacant, Premises on Sale or To be Let, and Wants, and Specific Articles for Sale by Private Contract are published in the *Chemical Trade Journal* at the following rates:—

10 Words and under 2s. 6d. per insertion
Each additional 10 words 6d. "

Advertisements, Announcements in the Directory Columns, and all Advertisements prepaid, are charged at the Tariff rates, which will be forwarded on request.

Advertisements intended for insertion in the current week's issue should reach the office by **Wednesday morning** at the latest.

CURRENT TOPICS.

EXPLOSION OF A COMPRESSED GAS CYLINDER.

AN explosion of a singular nature occurred last week at the Fenchurch-street Railway Station, resulting in the death of a man in charge of a cylinder of compressed gas—presumably oxygen. Some discrepancy prevails as to the precise manner in which the accident occurred, but the nearest approach to the truth seems to be that, while sitting on a seat, the box containing the cylinder either fell or was knocked off and exploded.

These conditions are very different to those which obtained at Bradford, where a fatal explosion took place about a year ago. In the present case the cylinder was in a box, and fell only a comparatively short distance. It had been fetched from a well-known firm, and the precaution of packing in a box was commendable. At Bradford the bare cylinder fell from a boy's shoulder on to the stone steps leading to the platform. Under these circumstances the regrettable incident is of more than ordinary interest. So far the explanation is hard to see, but the fact of whether the cylinder was a cast one or one of weldless steel, remains to be ascertained. If cast it will not be so difficult to understand how the accident occurred, as cheap cylinders of rather doubtful quality are stated to be in circulation. If of weldless steel, the explanation will only be further obscured. It has been thought desirable that the testing and filling of these cylinders should be under the supervision of the Board of Trade, but it appears that the Board of Trade have no authority to make any regulations in the matter. If, however, the public would for their own safety's sake demand weldless steel cylinders, or in the case of cast cylinders insist upon their being tested each time before re-filling, accidents of this nature would doubtless be even less frequent than they are now.

Under such circumstances there should be no great risk in charging cylinders to a pressure of 1,800 lbs., seeing that we know it is the custom with one important firm to test their own cylinders (all of which are weldless steel) to two tons, and all strange cylinders are tested to 1½ tons before being re-filled. After such precautions a working pressure, so to speak, of a little more than three-fourths of a ton can hardly be considered excessive, especially when allowance is made for the fact that this maximum pressure does not exist after the cylinder has been used, but gradually continues to decrease.

SOLID PARAFFIN AND PETROLEUM.

It would be very interesting to learn the sources from which the exaggerated reports of the importance of the effects of the proposed paraffin combine upon the prospects of the Scotch oil industry emanate. In regard to solid paraffin, the fact that the right of the Americans to use all the Continent as a dumping ground is now admitted by the Scotch makers to be

tenable, will lessen the profits to be made in this item, seeing that a reduction will have to be made in the Continental prices in order to compete with the American product. Further, the instability of the whole affair is evidenced by the fact of the American technical press actually stating that there will be no advance in the price of wax - at all events for some time to come. Apparently they know more on the other side than some over here.

With regard to the proposed advance in burning oil, this also is at present only a proposal. And supposing it becomes *un fait accompli*, it is absolutely misleading to represent the result as being an increased revenue of £70,000. per annum. It is true that that sum might be realised (though the net result of an advance, if one is made, is much more likely to be nearer £35,000.), but against this the decreased revenue from sulphate of ammonia has to be set. Sulphate has for some time been the backbone of the Scotch oil industry, but at the present drop in values the losses more than swallow up the imaginary £70,000. profit that is to be made out of burning oil. Again, supposing the makers succeed in selling their sulphate at an advance of £1. per ton, thus making the price only £2. below last year's values, the net gain from the dearer oil will only be £10,000. instead of £70,000., after the deficit in the sulphate account has been made up. It is hard to see, therefore, where the bright prospects which are talked of come in. Touching the flash-point question, the information we published the week before last appears to have received notice in several quarters by the technical press, but the observations of some of our contemporaries show such a lamentable ignorance of the subject, that the importance of making this question better understood to those who flatter themselves they know all there is to be known, is brought into painful prominence. Before endeavouring to enlighten the public further, it would certainly be best for some to study the question before pronouncing second-hand opinions, or else to say nothing at all; but confine their remarks to subjects they know a little about.

STATE OF THE CHEMICAL TRADES.

THERE has been a falling off in the Durham coke industry; some hundred ovens are reported as having been put out. Chemical factories in the Wear and Tyne districts are not as yet fully employed, cement, lead and copper works being quiet. The bleaching, dyeing, and finishing trades about Bolton are fairly good. Paper and pulp-makers are busy in the Barrow district. The chemical trade at St. Helens is decidedly better, three large works having re-opened, but full employment cannot be given as yet. There is also some revival in the plate-glass industry. The salt industry at Winsford still feels the effects of the recent severe weather, and the chemical trade is still depressed. At Hull and district the oil mills have been fairly busy, though employment has not been so brisk. The paint and colour works show a slight improvement, though short time largely prevails still, and some mills are running short handed. Trade with paper-makers and paper-stainers about Derbyshire is reported as being good. Oil, colour and varnish makers are also busy at Wolverhampton and neighbourhood. At Cardiff, and the South Wales district generally, chemical works are dull, short time being expected. Fuel works continue quiet, and full time is not being worked in Cardiff.

DEATH IN A LEAD WORKS.—A shocking discovery was made in the flues of the Dee Bank Lead Works, Bagilt, last week. The flues from the works, before running into the tall chimney over a quarter of a mile distant from the works, extend through chambers to some distance before the fumes can escape. The action of the fumes had destroyed the brickwork covering the flues, and previously the place had been repaired. A man named John Parry was missed, and a search was made. The searchers examined the spot where the flues had been repaired, and when the covering had been removed portions of Parry's body were found, the fumes that fill the chambers having partly consumed the remains. It is thought that deceased fell through the opening into the chamber flue, a distance of seven feet.

Official Memoranda.

(From the Board of Trade Journal.)

THE CUBAN SUGAR INDUSTRY.

The United States Consul-General at Habana, quoting a synopsis of a report in the "Revista de Agricultura," says that from 1857 to 1894 the Cuban sugar-planters found that the great was to be derived from the manufacture of the best white sugar in 1884, a revolution occurred in the sugar industry, causing enormous quantities of beet-root sugar manufactured by Germany, and other European countries. These countries, who previously imported all their fine sugars from Cuba, not only turn them now themselves of better quality and at a lower price than their own consumption, but export sugar, both raw and refined, in immense quantities to all the countries which furnish a market for sugar, the sugar production of these European countries, which formerly insignificant, being now much larger than that of Cuba itself. The change of circumstances has been so radical that there are no sugar mills in Cuba manufacturing the white sugar had so greatly the preference from 1856 to 1884. The Cuban planters are now convinced that, in order to sustain themselves against foreign competition, they must manufacture raw sugar; and this consequently undertaken to make a difficult and expensive change in their sugar works by changing them into what are called mills, in which that kind of sugar can be economically made involves borrowing the necessary capital, and it may safely be said that, with very few exceptions, the sugar works in Cuba are not profitable but they do not meet expenses, including interest.

The unfortunate condition of the sugar industry in Cuba is ascribed to three principal causes, to wit: The defective régime established in the island, the abolition of slavery with compensation to the owners of the slaves, and the great fall in the price of sugar since 1884.

In addition to this many imported articles which are indispensable to the sugar industry in Cuba are burdened with duties of from 50 to 100 per cent. of their value.

No previous period in the history of the Cuban sugar works was so disastrous as that beginning in August, 1893. The sugar-planters, with few exceptions, suffered heavy losses, although the quantity of sugar produced was among the largest ever known in the island.

NEW CALEDONIAN NICKEL.

On the occasion of the opening of the extraordinary session of the General Council of New Caledonia, M. P. Feillet, Governor of the Colony, referred at some length to the question of the production of nickel.

According to the "Bulletin du Musée Commercial" for February last, M. Feillet expressed the opinion that the present longer the time when it is possible to limit at leisure the production of the nickel with a view to maintaining this metal at high prices. Canada has commenced to work its wealth of nickel, and the which it has spent on this enterprise has been so abundantly judiciously utilised that the sale price of the article will very probably be reduced to a rate hitherto unknown.

However, neither the wealth nor the intelligence of the Ominers will be able to compete with the abundance and purity of New Caledonian product.

Admitting that, for the use of nickel in its alloys with copper, may compete with New Caledonia, such is not the case in regard to the use of pure nickel or of alloys with steel, the consumption of which will be, in the near future, the most important.

THE WOOD-PULP INDUSTRY IN NORWAY.

There at present exist in Norway 61 machine wood-pulp factories which three are annexed to the cardboard factories and 10 to other factories.

The total export from Norway of moist machine wood-pulp, including merchandise coming from Sweden and shipped in Norwegian vessels is estimated for the year 1894 at about 240,000 tons, as compared with 230,000 tons in 1893, 215,000 tons in 1892, 230,000 tons in 1891, 207,000 tons in 1890, and 190,000 tons in 1889. These 240,000 tons represent a value of from 9,500,000 to 10,000,000 kroner (29 to 31 sh.—Ed. C. T. J.)

Notwithstanding a heavy fall in prices during the year, the result is very satisfactory. This fall has not had, in fact, any appreciable effect on the total yield, whilst four-fifths of the annual production has already been sold since the commencement of the year, and the average price reached the price of 85 kroner per ton.

The anticipations for 1895 are less encouraging by reason of the reserve maintained by purchasers with the idea of forcing prices.

have not exceeded 33 to 36 krona per ton (50 per cent whilst the dry pulp will only reach 65 krona.

Wood-pulp or Cellulose.—The production of cellulose in Sweden has increased considerably in the course of last year, and at the present time 10 "sulphite" factories and 4 factories.

Production of these products in 1894 was about 34,000 tons of 0,000 tons of moist pulp, against 32,000 tons of dry and 15,000 tons of moist in 1893.

Value of this export may be estimated at between 6,000,000 and 7,000,000 krona.

Prices have fallen during the year. Fears are expressed that this year will be the eve of a serious and lengthened crisis. America, which is a great country for the disposal of this merchandise, made much less purchases than usual.

SERIAL OXIDATION OF TERPENES AND ESSENTIAL OILS.

(Continued from p. 143.)

A solution containing the body $C_{10}H_{16}O_3$ was evaporated down to dryness on the water bath, it was noticed that the residue obtained was no longer entirely soluble in water, and accordingly attempts were made to purify this body by fractional precipitation. A portion of the aqueous solution, obtained by oxidising Russian oil in the presence of water, was evaporated down on the water bath, the residual light-brown syrupy mass was poured into a large vessel, when a dense light-coloured precipitate separated out, shaking the mixture, formed into an adhesive mass. This precipitate was removed from the solution, well washed with water, dried at 100°C. and analysed.

0.827 gram gave 0.7180 gram CO_2 and 0.2047 gram H_2O .

0.947 " " 0.7495 " " 0.2134 " "

	Per cent.	÷ Atomic weights.	÷ C = 10.
C	69.59	4.799	10.0
H	8.04	8.04	13.8
O	22.37	1.398	2.4
C	69.36	5.78	10.0
H	8.04	8.04	13.9
O	22.60	1.415	2.4

Quantity that remained after analysis was dissolved in methanol and re-precipitated with water, again re-dissolved and re-dried, washed with water, re-dissolved in absolute alcohol, and on evaporation to dryness. The dried residue looked like a solid when cold could be easily powdered, but at 100°C. it caked and melted at the edges. After drying for several days in the desiccator it was analysed.

0.271 gram gave 0.5967 gram CO_2 and 0.1675 gram H_2O .

0.307 " " 0.5364 " " 0.1490 " "

	Per Cent.	÷ Atomic weights.	÷ C = 10.
.....	71.66	5.972	10.0
.....	8.19	8.19	13.7
.....	20.15	1.259	2.1
.....	71.81	5.984	10.0
.....	8.13	8.13	13.5
.....	20.06	1.254	2.09

Other liquor from the first precipitation was now taken, and evaporated down, after which some of the residue thus was dried at 100°C. and analysed.

Following is the average of three analyses.

	Per cent.	÷ Atomic weights.	÷ C = 10.
.....	63.42	5.285	10.0
.....	8.67	8.670	16.4
.....	27.91	1.744	3.3

Alk of this preparation was then macerated with a limited quantity of water at 60°F., and the resulting solution was decanted, and evaporated down to a syrup. The residual mass was then treated to a similar treatment, using, however, cold water, and after four days' drying in the oven, was analysed with the results.

	Per cent.	÷ Atomic weights.	÷ C = 10.
C	62.54	5.212	10.0
H	8.84	8.84	16.96
O	28.62	1.789	3.43
C	62.61	5.217	10.0
H	8.89	8.89	17.04
O	28.50	1.781	3.41

It thus be seen that this process of fractionating separated the $H_{16}O_3$ into two parts, one insoluble in water containing a higher percentage of carbon, the other soluble in water and con-

taining a lower percentage of carbon. When prepared from oxidised French and American turpentine, this substance is found to behave in an exactly similar way.

In order to avoid the application of heat to the substance ($C_{10}H_{16}O_3$) under study, some of the aqueous extract obtained on oxidising American turpentine in the presence of water was evaporated down over sulphuric acid in a desiccator, and the residue thus obtained, which was much lighter in colour than that similarly obtained by evaporation at 100°C., gave on analysis the following results:—

0.1286 gram. gave 0.3070 gram. CO_2 and 0.1015 gram. H_2O .

	Per cent.	÷ Atomic weights.	÷ C = 10.
C	65.11	5.426	10.0
H	8.77	8.77	16.16
O	26.12	1.632	3.01

In order to determine whether the body $C_{10}H_{16}O_3$ was capable of being further oxidised by air, a quantity of the solution prepared in the usual way was evaporated to half its bulk, and then subjected to a current of air during three days at 60°C. The solution was evaporated to dryness, and the residue was analysed.

0.3469 gram gave 0.8114 gram CO_2 and 0.2691 gram H_2O .

	Per cent.	÷ Atomic weights.	÷ C = 10.
C	63.79	5.316	10.0
H	8.61	8.61	16.20
O	27.60	1.725	3.24

It must therefore be concluded that no further oxidation has taken place, and that the changes which occur to this substance when its solution is evaporated down on the water-bath, are of the nature of dehydration and not oxidation.

An aqueous solution of the body $C_{10}H_{16}O_3$ has the following properties. It is strongly acid to litmus, and gives with $AgNO_3$ a light brown precipitate on standing. With ferric chloride no precipitate is obtained in the cold, but it yields a light brown precipitate on boiling. Lead acetate and sulphate of copper both give a slight precipitate on warming. Strong nitric acid produces a very violent reaction, and nitrous fumes are evolved. If neutralised, or nearly so, with ammonia, the solution darkens considerably, and then yields a bulky precipitate with neutral lead acetate. The precipitate thus obtained was on one occasion analysed, after washing and drying, with the following mean results:—

	Per cent.	÷ Atomic weights.	÷ C = 10.	÷ O = 1.
C	40.57	3.381	10.0	20.0
Pb	34.84	0.1691	0.5	1.0
H	4.23	4.230	12.5	25.0
O	20.36	1.273	3.7	7.5

(To be continued.)

Parliamentary Tottings.

HOURS OF WORK IN CONTINUOUS MANUFACTURES.

In the House of Commons last week, Mr. Brunner asked the Secretary of State for the Home Department whether he had made inquiries with regard to the number of men working in factories and employed in operations involving continuous work day and night seven days a week; and whether those inquiries were complete, and, if so, whether he would state the general results.

Mr. Asquith: I have made the inquiry which I promised to make in May last—as to the number of men employed for an average of 12 hours a day where the work goes on on Sundays as well as on week-days; 1,569 are so employed in *chemical works*, 438 in *breweries and distilleries*, 5,705 in *blast furnaces, iron and steel works*, 570 in *gas works*, 496 in *oil works*, 1,055 in *miscellaneous works*—total, 9,833. But the Chief Inspector states that these figures are defective, partly from the difficulty of ascertaining where men are so employed, and partly from the failure of some manufacturers to give the numbers they employ.

In answer to another question by Mr. Brunner,

Mr. Asquith said the Home Office had no powers to compel manufacturers to give particulars.

DEATH UNDER CHLOROFORM.—At the St. Pancras Coroner's Court recently, Dr. G. Danford Thomas held an inquest on the body of Caroline Mary Cox, aged 25 years. Martha Annie Cox, residing at 89, Chetwynd-road, Dartmouth Park, deposed that the deceased, her daughter, had been suffering from pleurisy and pneumonia, with complication in the lungs. Dr. Cook and Dr. Haynes placed her under chloroform for the purpose of performing an operation, when she suddenly died.—Dr. Haynes stated that the poor young woman was *in extremis* when the chloroform was administered, and she had taken only a few whiffs of the anæsthetic when she was seized with a fit of coughing, and died from syncope. The jury returned a verdict in accordance with the medical evidence.

Reports of Companies.

THE UNITED ALKALI COMPANY, LIMITED.

The fourth annual general meeting of the shareholders in the United Alkali Company, Limited, was held on Friday afternoon, 15th inst., at the Law Association Rooms, Cook-street, Liverpool. There was a very large attendance, and owing to the crowded state of the room several shareholders were unable to gain admittance. The proceedings, consequent on the present position of the stock in the market, were at times somewhat lively. The meeting lasted for nearly two hours. Sir Charles Tennant, Bart., president of the company, occupied the chair, and was supported by Mr. James H. Dennis, Col. Gamble, C.B., and Mr. Holbrook Gaskell (vice-presidents), Mr. John Brock (chairman of the directors), Mr. James C. Stevenson, M.P. (vice-chairman), Messrs. Thomas Alexander, E. Baxter, William Gamble, Holbrook Gaskell, jun., Lieut.-Col. James B. Gaskell, Messrs. D. M'Kechnie, E. K. Muspratt, George Pilkington, John A. E. Rayner, Robert Shaw, and George Lloyd Wigg (directors), Messrs. A. Allhusen, C. E. Barlow, John E. Davidson, James Tennant, and J. R. Wyld (managing directors), and Mr. Eustace Carey (secretary).

The President, in opening the proceedings, said it had hitherto been a source of satisfaction to him to preside over that meeting, but the past year had been a very bad one for the company and for all who were interested in commercial or industrial concerns. He had known the chemical trade intimately for 50 years, and he did not remember any year in which the fall in prices had been more continuous and consumption more disappointing. The directors, had, therefore, to cope with very evil times. (Hear, hear.) The report had been in the hands of the shareholders for some time, and he would therefore at once call upon Mr. Brock to move its adoption, and make a statement on the affairs of the company generally.

Mr. Brock then said:—Mr. President, Ladies, and Gentlemen,—In rendering an account of our stewardship for the past year, perhaps I may be permitted to remind you of what I said at the close of the remarks I addressed to you in this room twelve months ago. In speaking of the future, I remarked that "the state of trade the world over was not brilliant," and that "our particular industry will improve or decline in sympathy with that of the world generally," but I was not prepared, and I think most of the business men I am addressing were not prepared, for the extreme depression which crept over business as the year grew older, amounting in its closing months to almost complete collapse in some branches; indeed, the past year may be classed as one of the worst that traders and manufacturers have experienced for many years. The struggle over the tariff question in the United States in the autumn of the year for a time seriously reduced our sales to that country, and also adversely affected our home trade, as most of our home industries doing business with the United States and using our manufactures felt like ourselves the stagnation caused by the delay in the settlement of this question. In many cases contracts are made by large users of chemicals for "their estimated requirements," and in not a few of such cases the actual consumption fell below the estimate from 30 to 50 per cent., showing how much upset were the expectations and calculations of many manufacturers with regard to their own business, and how widely trade depression extended. In fact, there is hardly an industry which was not more or less under a heavy cloud in 1894. In the latter part of the year we had again to suffer from a strike of coal miners by which our Scotch works were laid idle for several months, causing a serious reduction in our profits from those factories. And here let me mention that many people are under the impression that our company is one devoted exclusively to the manufacture of alkali or forms of soda; but this is not so, for, as a matter of fact, we produce a large number of articles in addition to alkali products—from silver, worth at the present time about £4,000, per ton, to oxide of iron or purple ore, worth 5s. 6d. per ton; from chlorate of potash, worth about £42. per ton; to chloride of calcium, worth 30s. per ton. Of our total deliveries of all articles last year, alkali, in all its forms, stood for only about 40 per cent.; and it is our desire rather to multiply the number of articles we manufacture than to reduce them, believing that, within limits, the more strings we have to our bow the safer and steadier will our business be. (Hear, hear, and applause.) The markets all round last year were extremely unsatisfactory, and though we paid close and unremitting attention to selling, and used every endeavour to place our productions, we had to be content with delivering a much smaller proportion of our output than usual. Nor was it a question of price. It was simply that in the then condition of trade the world did not want our goods. Competition, also, was active, and this, combined with the lack of demand, caused a considerable fall in prices. For instance, between January and December the price of soda ash fell about 14 per cent., bicarbonate of soda 26 per cent., caustic soda 14 per cent., bleaching powder 12 per cent., and soda crystals 24 per cent. For silver, copper, and purple ore we had a disappointing

market during the whole year. We have continued careful attention to the cost of manufacturing, a most important matter at all times, but especially in times like these of keen competition and close margins, and we have pushed on various alterations and improvements having this end in view, and with considerable success. Wages have been adjusted, equalised, and reduced where they required it, in doing which our men have met us very fairly. (Hear, hear.) Retrenchments have been effected in various directions wherever the pruning knife can be applied with advantage; it has been applied; and no effort is being spared to reduce our running charges and keep them within moderate bounds. The economies already effected reach a considerable amount, of which we shall reap the benefit during the present year. (Applause.) Processes and the march of invention—especially electrical processes have not been lost sight of, and everything in this direction likely to be useful and profitable has been carefully examined, but, so far, we have not found anything in this direction so decidedly an improvement as to induce us to adopt it. Our various works have been kept in repair and increased efficiency, and we have paid the most careful attention to our revenue. (Hear, hear.) Our stocks have been carefully valued again well written down to meet the fall in values during the year, as these stocks were large at the close of the year our profit and account has suffered considerably in consequence, but our main intention is to keep our company in a sound condition in this and other particulars. (Applause.) Early in last year we completed a contract previously entered into with the Tharisk Sulphur and Company, Limited, for the purchase of their metal extraction works on Widnes on terms favourable to our company. The purchase of these works has improved our position in respect to one of our most important raw materials—namely, pyrites—as we are now able ourselves to supply the cinders or refuse from the pyrites we burn in our district, and are, therefore, in a more independent position than before. I am glad to be able to say that the result of the first year's operation at these new works has fully justified the purchase. (Applause.) Now, turning to the accounts, in the share capital and debentures there is no alteration. £60,416. 13s. 4d. is the usual half-debenture interest to December 31st last, and paid on January 1st year. Not being paid within the year that the balance sheet appears as a liability. The debts owing by the company are £242,664. 13s. 11d., or £41,957. 15s. 4d. less than last year.

The amount brought over from 1893 and placed to reserve is £42,581. 8s. 3d., making the total reserve £611,935. 11s. 2d. On the other side of the accounts the additions to property, freeholds, &c., stand for £82,192. 3s. 7d., which leaves that as after deducting £16,548. 17s. 11d. for property and plant we have £7,676,204. 2s. as against £7,610,560. 16s. 4d. last year. Stocks of manufactured products, raw materials, stores, and articles, which have been very carefully valued, stand at £3,165. 9d., or £43,658. 16s. 5d. more than last year. The owing to the company amount with the outstanding debentures is £291,715. 17s. 2d., or £23,217. 6s. 2d. less than last year. Our investments, mainly in Consols, stand at £286,110. 10s. Cash at our bankers, head, and district offices, with bills receivable amounts to £108,415. 4s. 8d., or about £10,616. 9s. 10d. more last year. Looking at the profit and loss account, you will see that for the past year the gross profit has been £396,358. 6s. We have received as interest on our investments £8,981. 11s. and for transfer fees £523. 12s. 6d., making a grand total of £405,863. 16s. 4d. On the other side the items of charge are much the same as last year, except that you notice we show an amount paid for income tax separately. Now, perhaps, you expect me to say a word or two about the future. I wish to tell you that there were decided signs of improving trade last year. There certainly are signs in some directions, but they need a great deal of development before it would be safe to speak in any decidedly ful way about them. As the year goes on we may experience a demand for our manufactures; let us hope that we shall, for that is what we want. Our works were never in so good a form for the output of large quantities of goods, and that cheaply, as they are at the moment; and given a fairly brisk demand, so as to bring into use the alterations, improvements, and economies we have already made and are still making, we do not fear our ability to render an account to our shareholders. I cannot close my remarks without saying that the directors regret that they are not in a position to recommend a dividend to the ordinary shareholders. The directors have done their best; they could to earn a more substantial dividend than is shown in the accounts. The fault is not with them but with the times. The time of depressed trade must have a turning, and when that turning comes the directors believe there will be a very different account to be rendered, and one more acceptable to all concerned. (Applause.) I now move "That the report and statement of accounts be received, adopted, and that, after carrying forward £26,775. 17s. 2d. being dividend be, and is hereby declared, out of the profits which accrued during the twelve months ending the 31st December last."

be payable on the 18th inst., namely, on the £10. preference dividend of 7s. per share, less income tax, making with dividend paid in August last a dividend of 7 per cent. per

Muspratt, in seconding the motion, said he did not know how much to add very much to the very clear statement of Mr. Brock; what was, of course, in some respects an unsatisfactory statement that could be said had been said as to the cause of the profits, and they could not command the consumption of the articles they produced were consumed they could manufacture as cheaply as any other firm or body of firms in the world.

Reference had been made by a shareholder to Messrs. Bond, and Co., but it must be remembered that the goods manufactured were not exactly the same goods manufactured by the United Alkali Company, and the latter had undoubtedly suffered as far as the matter was concerned to a greater extent than the former. "They can make their works pay when you cannot," he said. "In connection with that he said it should be remembered in one year they paid 100 per cent., and the next year 10 per cent., or two-thirds less, dividend (a Voice: "And repeat it"). The gentleman who made these references was a prophet, but the members of the board of the United Alkali did not pretend to be prophets. Their chairman last year he could not exactly tell them how trade would go during the year, and, unfortunately, trade all over the country, and all the world, had been depressed. Everyone who had paid any money what had been going on in the United States, which was a market, knew that trade there had been very much depressed for various causes. One was the protracted discussions that had been going on of the tariff, and when that was settled there came those of currency, which were still affecting the trade of the world, and which were having an effect over the whole world. Of course they might prophesy, if they adopted that all prices would go up. Well, if prices did go up, they would be able to give the shareholders a dividend, but they did not as they were merely mortals, to command success. All they was that they were deserving of it. (Applause.) The speaker then invited remarks on the motion.

Mr. Brock said he had listened very carefully to what had been said and had heard the same remarks about depressed times before. He might allow him to tell them that they evidently anticipated when they were selling their shares, which had fallen in value of the stock very much. Twelve months ago the stock stood at £8, were now only quoted at £2, and he thought the directors had evidently anticipated the fall, and knew at the best prices. They ought to be ashamed of themselves if they would admit that there were too many large salaries, and on the board of those whose works had been taken over by him. He had been connected with commercial matters for eight years of age, and everything he had touched had gone wrong except what he had touched in that company, and he said he had lost £1,100. in twelve months. He would like to answer the directors had got for selling their shares.

Mr. Brock said Mr. Pygott had addressed them with a great deal of authority. He (Sir Charles) was originally the largest shareholder in the company, and to-day he was a larger shareholder than he had ever been. He and his family held 20,000 shares, and they had been so long in the company that he was a sufficient answer so far as he was concerned. He made that explanation because Mr. Brock had addressed him personally in his observations.

Mr. Brock.—No, only you made the opening speech.

Mr. Brock.—In answer to a question from Mr. Walker as to how he had lost the money in the company, Mr. Pygott said it was through buying shares, and now they were only worth £2.

Mr. Brock.—You should have stuck to them, and you would not have lost your money. (Hear, hear, and uproar.)

Mr. Brock.—I have stuck to them, and got them here. (Laughter.) A shareholder named Cavanagh referred to the depreciation of the stock and said he had been led to invest his money in the company because of some of the most respected names in Lancashire were on the board of directors. He stated that the Manchester Canal, which had only paid its debenture interest out of the profits and no prospect of ever paying one halfpenny dividend, stood in the public estimation as the United Alkali Company. (Great laughter.) He maintained that if an authoritative contradiction could be used regarding the statement about the directors selling shares it would have prevented the ordinary shares going down to the price, but no contradiction had been made, and therefore he included that there was a great deal of truth in the rumours. At certain points in the balance sheet, he criticised the policy of the directors to an unlimited extent to the stock unless there was a market for it, and also thought that the salaries of the officers ought to

be curtailed when the trade was so limited as the directors acknowledged it to have been during the past year.

Mr. Snape said his sympathies went out towards the two gentlemen who had addressed them, and towards other shareholders who were in a similar position. He himself had found his property in the company shrinking in value during the past year, and he set himself to make an examination of the causes which had brought about that unfortunate result. He had heard the rumours which one of the speakers had referred to. It was generally bruited abroad in the neighbourhood of the Liverpool Stock Exchange that the directors had been selling their shares (A Voice: "It's a fact"), and he had discovered that this was one of the great contributory causes to the fall in the value of the shares. (Hear, hear.) He therefore proceeded with the investigation for the purpose of finding out how far this statement was justified by facts. He discovered that it was true to this extent—that two of the directors had sold their shares. He found, on examining the books of the company, that one of these directors, when the concern was launched, had held 1,234 preference shares and 1,562 ordinary shares, and to-day he only held 200 ordinary shares (A Voice: "Why is that?" and interruption). He would tell them why he held that number. It was because he was still a director, and, according to the articles of association, he was expected to hold £1,000. nominal value of stock (A Voice: "Chuck him"), and if it were not for that word "nominal" he would be disqualified from sitting on the board. (Loud applause.) He (Mr. Snape) contended that that gentleman, in the spirit of the articles of association, only held stock which to-day was not worth more than £425., and he ought no longer to sit upon that board. (Applause, and cries of "Name.") The gentleman's name appeared on the balance-sheet as offering himself for re-election. According to the articles of association that gentleman was bound to offer himself for re-election. He (Mr. Snape) did not know whether that gentleman was offering himself with the intention of seeking re-election, or simply because he was bound by the letter of the articles of association to offer himself; but if he intended to press that offer upon the shareholders, he (Mr. Snape) begged to intimate to their president that he would take the opinion of the meeting as to whether they should re-elect him or not. (Loud applause.) There was another director—(cries of "Name") who, he believed, was re-elected last year, and who therefore had not served out the period of office for which he was elected, and when the nominations of directors came on it would be time enough for him to mention the name of the director to whom he referred. That gentleman, when the concern was launched, held 3,437 preference shares and 5,141 ordinary shares; and to-day he, like the other director to whom he had just alluded, held precisely the same number of 200 ordinary shares, no doubt for the same reason. (Renewed cries of "Name.")

In accordance with clause 93 of the articles of association he intended to ask the meeting, and he trusted they would support him, to carry a resolution, removing that gentleman from his position on the board, in accordance with the powers which were given them in that clause. (Loud applause.) These two gentlemen, he pointed out, were actually receiving in fees an amount which would pay them from 50 to 100 per cent. on the investment they now held in the company; and it was an astonishing thing to him how they could have allowed themselves to remain on the board. (A Voice: "They are no gentlemen," and applause.) Everyone had a right to dispose of his property as he liked, but they denied the right of such men to sit upon the board and administer the affairs of a great concern like theirs. As far as his investigations went, these two gentlemen were the only ones who had sold shares in the way indicated. (Applause.) He did not mean to say that other members of the board had not transferred either to relatives or friends, or from one description of share to another, some of the shares they held, but he believed, so far as his investigations had gone, that such transactions had been wholly insignificant. That was only as he should have anticipated, seeing that Sir Charles Tennant was the chief officer of the company, and that Colonel Gamble and Mr. Holbrook Gaskell were also officers, whose names were so many synonyms of honour and integrity, and in whom they all had the utmost confidence, and also in the other members of the board. (Applause.) Referring to the attacks which had been made upon the company, Mr. Snape said there had been sales of shares made upon the Liverpool Stock Market within the last week or so, and when the gentlemen were called upon at the settling day to deliver these shares they apparently had none to deliver, and he knew that what he was stating was a fact when he said that those persons who had been selling those shares had been what was technically called selling "short." In other words, they had been "bearing" the market in the hope that possibly the newspaper that had attacked the company might put another article in which would so frighten the shareholders that they would sell their shares, and so enable those persons to buy and deliver them the next fortnight, and put the difference into their pockets. He quite agreed with what had been said by Mr. Muspratt as to the effect which the tariff disputes in America had had on their industry. Alluding to their ammonia soda works at Fleetwood, he

said he had spent a day in examining them, and he assured the shareholders that they had there as fine a property as any concern in the world could desire. (Applause.) He again urged upon the shareholders not to be misled into sacrificing their shares owing to the conduct of the two directors he had referred to in selling their shares and the attacks that had been made upon the company. (Applause.)

Mr. Holbrook Gaskell said that nothing would have induced him to rise on that occasion but the fact that what he might call a notorious newspaper had published his name as having transferred shares to a considerable extent. He assured the meeting he had not sold a single share since the company was formed. On the contrary, he had bought shares in addition to his original holdings, and if any of them were so weak and foolish as to part with their shares at the present absurd price, they would probably find that some of them were being registered after their transfer in his name. (Laughter and applause.) He had seven sons and daughters, and each of them was a shareholder in that company. The shares which he had transferred had not been sold. They had been given to his children, and he might tell the meeting that not a child of his had parted with one of these shares; in fact, he might tell them that the members of his family had from time to time been buying shares. He might take his own position as a fair sample of the action of the great body of the directors who sat around him. There had, sadly, been too much made of the selling of shares. No doubt Mr. Snape had spotted two directors who had done so. He (Mr. Gaskell) had no feeling in their favour, but he left them in the hands of the meeting. The shareholders must not go away with the idea that that kind of conduct had been general in the Board. The contrary had been the case. The great bulk of the shares were held by the gentlemen who sat at the Board, and, so far as he knew, unless special exigencies arose, which might compel some of them to sell or part with shares, he thought he was right in saying that they had no intention to sell them.

Mr. John Rylands referred to a statement made by Mr. W. H. Lever, at the annual meeting of the Sunlight Company, held a few days ago, to the effect that the company made their own alkali in consequence of the arbitrary manner in which they had been treated by the United Alkali Co., and that they found it was a good source of revenue to them. He should like some explanation regarding that.

Mr. Brock, in reply, explained that every sale they had made to Lever Brothers up to the time at which they had begun to make their own soda was at a lower and a lower price, and he could not think, in the face of that, that they were guilty of arbitrary conduct in their relations with Lever Brothers. Referring to a remark that they should start and make soap themselves, he would like to inform the shareholders that they were small soap makers and they wanted to be large soap makers. If all the shareholders would buy the soap from the company they would very much improve the revenue and also their own dividends.

The report was then put to the meeting, and carried unanimously.

The meeting next proceeded to the re-election of directors, Messrs. E. Baxter, Holbrook Gaskell, jun., D. M'Kechie, and P. J. Worsley being unanimously re-elected.

Mr. Brock explained that Mr. Charles Wigg, whose name also appeared on the list of retiring directors who offered themselves for re-election, had authorised him to say that he had been wishful to retire from the directorate for some time; but he felt, as he had promised, in accordance with a clause in the articles of association, to remain on the Board if it was the desire of the shareholders for five years, he ought to offer himself for re-election; but if the shareholders would release him from that obligation he should prefer to retire. (Hear, hear.)

Mr. Wigg's name was consequently not put before the meeting for re-election.

Mr. Thomas Snape next moved that, in accordance with clause 93 of the articles of Association, Mr. W. J. Menzies be removed from his seat on the board of directors. He contended that they had the power, by extraordinary resolution, under that clause to remove any director before the expiration of his period of office, and to appoint another qualified person in his stead. Mr. Menzies was elected a director last year, but as he had sold all his shares except 200, he ought no longer to remain on the board. He believed Mr. Menzies was not present at the meeting.

Mr. Hawkins, solicitor to the company, ruled that Mr. Snape's motion was not in order, and could only be moved at an extraordinary meeting after seven days' notice.

Mr. Snape questioned this decision, and said Mr. Menzies ought to have the decency to resign without such a hint from the shareholders. The only way to bring the matter to an issue was by taking the vote of the meeting, and he therefore moved that it was the opinion of the meeting that it was desirable Mr. Menzies should resign. (Applause.)

Mr. Hawkins again stated that he had no hesitation in saying the motion was out of order.

Mr. Snape said he would not press the motion if the directors would promise to ask Mr. Menzies in writing to resign.

Mr. Holbrook Gaskell was quite sure, as soon as Mr. received information of the remarks that had been made at the meeting they would receive his resignation. (Hear, hear.)

Mr. Wilson said he would move that the meeting desired the opinion that any director who had disposed of the greater part of his shares ought not to continue on the board. That was applicable in the future to any director who acted in a like manner. (Applause.)

Colonel Gamble said that, with the President's permission, he would like to say that such a resolution as that proposed, if passed, would have the effect of excluding him from the board of directors, as he had disposed of the greater part of his shares before that company was formed. He bought and paid for and had allotted to him a certain number of shares of the company. Two years afterwards he was on the board, and his works were then amalgamated with the company, and he got a considerable number of shares allotted to him in payment of these works. He happened not to have seven children like Mr. Gaskell, but eleven, and two years after the beginning of 1893, he parted with the half of all the shares he had to these eleven children; so the shareholders would see that he had disposed of one-half of his shares in that way. He ought, however, to say that he had still some shares besides that £15,000 worth that he had before his works were amalgamated with the company. He would confess that he had sold £100 worth; so that he had sold £14,900 worth, and another £100 worth since. If they would like him to do a little further, he would say that he had got something like £100 worth of stock in the hands of the stockbrokers ever since 1893. On the occasion to raise a sum of £20,000 of ready money, and he had £15,000 worth of stock, and he would have sold the other £5,000 worth, but he could not get 5½ for the ordinary shares, and he would not take any less; so he was afraid the resolution must be put in some other form, or else it would do some injustice to someone. He had disposed of his shares to his children.

The President said that Colonel Gamble, like himself, was an honorary director. He held an enormous quantity of stock in the company, and his explanation was unnecessary, except that it might be of some interest to the gentlemen present.

Mr. Holbrook Gaskell expressed the hope that the resolution would not be pressed. He would tell them at once, if it were passed, that he would send in his resignation to-morrow, and then he would be a free and independent man.

Mr. Wilson said he knew that the selling of shares by the company had a very disastrous effect upon the company, but the shareholders had confidence in the gentlemen who sat on the board, with the exception of the two who had been referred to.

Mr. Rylands moved that Mr. Thomas Snape be elected a director in place of Mr. Wigg.

The President pointed out that a clear seven days' notice was given to an extraordinary meeting called before such a motion could be put.

A Shareholder said that, as Mr. Snape's resolution had been put out of order, he thought it would give the shareholders satisfaction if the directors would promise, in the event of Mr. Menzies resigning, after the feeling expressed at that meeting, they would convene an extraordinary meeting to carry the resolution.

The President said he was quite ready to do so.

In answer to a Shareholder, Mr. Hawkins said they could, according to the articles of association, reduce the number of directors, or bring in any gentleman not at present a member of the board, or call a meeting of which special notice had been given.

A Shareholder: Take the sense of the meeting as to whether Mr. Snape will be acceptable as a director.

The President objected to such a course, and added that, as a matter of fact, there was a feeling abroad that the board was too large, and meant large charges upon the revenues. If they could reduce the board without touching the efficiency of the company, they would do so.

Mr. Snape said his name had been introduced without any being given to himself. He differed from Mr. Hawkins in his interpretation of the clause as to the course of business at meetings. The clause distinctly referred to those who had retired from the company. Mr. Wigg was retiring at that meeting. He had retired in the sense referred to in the clause, which said the company shall fill up the vacant places by electing persons, so that someone would still be elected in accordance with that clause. He therefore contended that that meeting was bound to fill up the vacancy by appointing one to the office of director.

Mr. Hawkins said that, speaking with a full sense of the responsibility, he repeated what he had already said, that it was not the duty of the meeting to elect anyone to this office, and he was competent to bring forward any gentleman for the board of directors who was not already there, unless it was done as a resolution after seven days' notice.

On the motion of Mr. Melland, Messrs. Stead, Taylor, and

and Co., Finney and Son, and Monkhouse, Goddard, and Co., acted auditors for the current year.

The President said that that was all the business, and he hoped that he had the pleasure of addressing them he should be able to do so on more favourable auspices than that day. For his own part he looked forward hopefully, but not at the moment very much, to the future. He was glad to see that the President of the Society of Trade, at the dinner in London the other day, expressed that the trade of the country was improving, but he could not from his own experience of the two great industries with which he was connected—the steel trade and the chemical trade—he saw any signs of improvement. One thing which gave them a little hope was that a congress was to be called for the autumn to settle the relations between gold and silver, so as to establish and bring the two metals together, in order to make the currency of the country.

He was really a monometallist himself, but if they could not get an international ratio between gold and silver, he believed he could recover a good deal of the trade which the world had been losing. They had been losing their textile trade, and with that there was a consumption of their chemicals. He had been very much struck by the observation of an American the other day, who said that he did not get the two metals tied together by a united agreement between the great Governments of the world, they should do a great deal of trade. He was looking forward most hopefully to the time when this would be done in this country. There were different opinions as to the matter. Until, however, they got an agreement between the two for something like a fixed uniform ratio, they should not expect when they did get that, they believed they would have improvement in the commercial and manufacturing industries of the country. (Applause.)

Mr. Gaskell, in moving a vote of thanks to Sir Charles and the President, said that the name of Sir Charles was a source of pride to the company. He was known all over the country as a most honourable feelings and conduct, and the shareholders were proud of it that so long as his health permitted him to occupy the position of President of that company nothing would go on at the time that was at all discreditable or injurious to the company.

The motion was carried by acclamation.

The President briefly acknowledged the vote of thanks, and moved a vote of compliment to the chairman and directors and the staff of the company.

Mr. Thomas Snape seconded the motion, which was carried.

Mr. Gaskell having acknowledged the compliment, the proceedings terminated.

THE PATENT CANDLE COMPANY., LIMITED.

The eighteenth ordinary general meeting of this company was held at Cannon-street Hotel, E.C. Mr. T. C. Wright presided, and on the adoption of the report and accounts, said that the balance sheet, at the bankers, and on deposit, amounted to £70,000., and the investments reached a total of no less than £142,873. It was supposed, however, that the whole of that sum was available for working purposes, as on the other side of the account there was a balance of unclaimed dividends, factory savings bank account, insurance fund, workers' pension fund, and a workmen's accident fund. The company's floating capital employed in the trade amounted to £38,052., but that sum would not have been sufficient for the business if the prices of their raw materials had risen as high as they were five years ago. With respect to the sum of £10,000. which was written off for depreciation, the Chairman said that in every manufacture changes of processes were going on, which either involved the alteration of existing plant or the introduction of newer machinery. The circumstances of the year 1894 were in all respects precisely the same as in 1893, and the directors were able to declare a dividend of £1. 7s. 6d., as in the previous year. This was not due to any extra profit, but simply to the fact that, as the insurance fund now stood at its original fixed for it, the £4,300. which had been annually added to that fund was appropriated to dividend purposes. An opportunity occurred during the year to purchase the goodwill and trade of Ogleby and Co., Ltd. (in liquidation), at a reasonable price, and the directors made the purchase out of revenue. The workers' pension fund had been a great success, and it was satisfactory to note that those who had applied for relief had been in the service of the company for more than fifty years.—Sir Peter Spoker seconded the motion which was adopted without discussion.

At the meeting it was with pleasure we learn that Messrs. Cross and Clayton Beadle, of London, have been awarded the John Fry medal and premium, by the Franklin Institute, for their discovery of a new plastic compound of cellulose.

Trade Notes.

FIRE AT A STARCH WORKS.—Damage amounting to considerably over £4,000. was caused last week by a fire in the extensive starch works of Messrs. Wilson and Co., Paisley.

CYANIDE GOLD RECOVERY IN SOUTH AFRICA.—49,265 oz. of gold have been recovered at the Rand and 8,300 oz. in other districts (total 57,565 oz.) during February by means of the MacArthur-Forrest cyanide process. The January total was 58,634 oz.

REPORTED NEW CYANIDE COMPANY.—It is stated that the Chemical Syndicate, Limited, has been formed, with a nominal capital of £6,000., for the purpose of acquiring a new process for manufacturing cyanide of potassium.

CHANGE OF ADDRESS.—We are requested to inform our readers that, owing to expiration of lease, Messrs. O. Berend and Co. have removed from 61, Fore-street to more commodious premises at Dunedin House, Basinghall-avenue, E.C., which is about three minutes' walk from their old address.

EXTRAORDINARY OUTPUT OF NAPHTHA.—A new naphtha fountain of remarkable yield has, according to the latest information from Odessa, been struck near Baku. The output, which is ejected with uncontrollable force, is computed at about 15,000 tons per day. All the available reservoirs have been filled, and the oil is now being run off into the Caspian Sea. So far all attempts to batten down the out-rush have been fruitless. The thick iron stakes used in these endeavours are shattered like matchwood.

PETROLEUM LAMP ACCIDENTS.—Mrs. Harris, wife of a fishmonger at Kington, Herefordshire, died last week as the result of injuries sustained through the bursting of a petroleum lamp.—About seven o'clock on Sunday evening, an alarm of fire was received at the Fire Station, Birkenhead, and Superintendent Monk, with the fire brigade, at once turned out and proceeded to Taylor-street, off Bridge-street. They found there was a fire at the first house. A lamp in the sitting-room had exploded and set the furniture alight. The flames were soon got under, and but little damage was done.

PREVENTING GASEOUS OCCLUSION IN COAL.—To prevent the deterioration which takes place in coal when stacked in the ordinary manner, it has been proposed in the case of a large quantity having to be stacked for a considerable period, to try the effect of submerging it in a sufficient depth of water to give the necessary pressure for confining the gas within the pores. And it is further suggested that to prevent loss of gas in transit coal might be conveyed, while remaining submerged by the numerous canals and navigable rivers which are now being rehabilitated in the various countries of Europe.

CONCENTRATED MANURE.—The Cleansing Department of the Manchester Corporation, under the management of Mr. R. D. Callison, make a manure of considerable value from the pail refuse of the city. The manure is guaranteed to contain from 3½ to 4 per cent. of ammonia (which exists in the same form as in guano), 8 per cent. bone phosphates, with 75 per cent. potash salts, and 38½ per cent. organic matter. The price is £3. per ton, or delivered in 1-cwt. bags within 50 miles of Manchester. Further particulars and instructions for application can be had on applying to the above department at the Town Hall.

CALDER CHEMICAL COMPANY (LIMITED).—The liquidator of this company has called a final meeting for April 5th, when the accounts will be presented, and the shareholders will decide what shall be done with the books and accounts of the company. The incorporation took place on January 18, 1875, when the objects were declared to be the acquisition and carrying on of the business of chemical manufacturers then owned by Messrs. Holt Brothers and Browne, of Whitwood, in the West Riding of York. At present the capital is £10,250. in £50. shares, and 200 of these have been taken up and fully paid for. Reuben Hunt (97 shares) and Frederick T. Hunt (98), both chemical manufacturers, of Castleford, are the principal shareholders. The resolution for voluntarily liquidating was passed on January 22nd, 1894, when Anthony A. Clarkson was appointed the liquidator.

OBITUARY.—It is with regret we learn that Mr. Crosby Lockwood, of the firm of Crosby Lockwood and Son, died in his sixty-eighth year, at his residence at Highbury New Park, on the 4th inst. His connection with the publishing and bookselling trades, and particularly of engineering and scientific works, is well-known to most of our readers. He rendered many services to the public by his successful efforts to make technical literature available at prices which placed rudimentary and elementary books within the reach of every student.—We learn also of the recent death of Mr. F. R. Hughes, of Bo'ness, a well-known chemical manufacturer. For many years he made continuous experiments in the extraction of iodine from kelp or burnt seaweed, and eventually succeeded in perfecting a process quite original in the manufacture of this chemical. His works at Bo'ness cover over two acres, and at one time he employed over 120 men.

FATALITY AT AN OIL WORKS.—An inquest was held on Wednesday by Mr. S. Smelt, deputy coroner for Manchester, respecting the death of Thomas Wagstaff, aged 44, lately living in Egerton-street, Ashton-under-Lyne. The deceased was manager of Messrs. Moir, Crane, and Co.'s oil works in Ashton New Road, Clayton. About one o'clock on Saturday afternoon he fell into a tank containing boiling paraffin wax and was so severely scalded that he died at the Royal Infirmary on Monday. A verdict of accidental death was returned.

THE FIRST IRISH PAINT MILL.—Messrs. Boileau and Boyd, of Bride-street, Dublin, have just erected, fitted up, and set working the only paint mill in the country, and by doing so have inaugurated a new, and what promises to be a flourishing, Irish industry. The three-storeyed mill is replete with modern machinery, comprising among other things three triple granite roll grinders and five half-ton mixers. There is every convenience for the rapid preparation of all kinds of colours either dry or ground in oil. The power is supplied by a modern steel boiler, and a 40 h.p. horizontal engine by Messrs. Davey, Paxman and Co. The upper floors are devoted to labelling, finishing and packing. Hundreds of tons of ground white lead, paints, and putty are annually imported from London, Liverpool, and Glasgow to Dublin. It is most probable now that local dealers and consumers will support this new Irish industry by their custom, and thus show Messrs. Boileau and Boyd that their enterprise and energy are appreciated.

THE FARADAY MEDAL.—The Chemical Society has conferred its Faraday medal upon Lord Rayleigh in recognition of the brilliant investigation which has led to the discovery of Argon. Chemists have before now made incursions into the domain of Physics as in the cases of Davy, Faraday, Graham, and Andrews; but Lord Rayleigh, whose reputation as a physicist and mathematician is world wide, has turned the tables by making a discovery of first-rate importance in what may be regarded as the domain of purely chemical inquiry. His work is the more remarkable because it was carried on upon purely physical lines, and owed its success to the extreme refinement and exactitude with which he repeated the investigations of Regnault on the density of atmospheric gases. It is curious to reflect that nothing but lack of the needful delicacy of admeasurement has delayed for 110 years the discovery upon the threshold of which the Hon. Henry Cavendish stood in 1785. The previous recipients of the Faraday medal are Dumas, Canizzaro, Wurtz, Helmholtz, and Mendeleeff.

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzols are steady and in moderate demand at 1s. 1½d. for 90's and 1s. 1d. for 50/90's. There is no change in carbolic acids, prices still ruling low. Naphthas are also dull at 5d. for crude and 1s. 2d. for solvent. There is not much doing in creosote. Anthracene is maintained at combination prices, which are 1s. 1d. for 30% A and 10d. for B. Pitch is steady at 33s. 6d. to 34s., f.o.b. East Coast, and 33s. for forward.

Sulphate of ammonia is dull, there being practically no demand for either home or foreign account. Considering the time of year, this is an exceptional state of affairs. Prices for the few actual transactions which have been effected are:—London outside makes £11., Liverpool £10. 17s. 6d. to £11., Hull £10. 17s. 6d. to £10. 18s. 9d., and Leith £10. 15s. to £10. 17s. 6d. Nitrate is easier.

REPORT ON MANURE MATERIAL.

There has been more business passing for prompt and early delivery, but prices on the whole rather favour buyers. For forward delivery there is very little doing, notwithstanding the easy prices at which sellers would treat. The position of mineral phosphates is unchanged, and values remain as last reported. A cargo of River Plate bones, arrived at port of call, has changed hands at something under £4. 2s. 6d. per ton, and £4. 2s. 6d. would be outside value of anything afloat. There is no business to report in crushed Kurrachee bones, there being none on spot, and prices asked for shipment preclude business. Sales of Bombay bone meal on spot have been made at £4. 6s. 3d. to £4. 7s. 6d. per ton, and now £4. 10s. is required ex store. £4. 7s. 6d. per ton would probably have to be paid for anything afloat. Owing to arrivals the market for nitrate of soda is easier on spot. For delivery next week 8s. 7½d. to 8s. 9d. per cwt. would be business. Due cargoes are worth about 8s. 6d. per cwt., and those arriving at port of call have fetched something more. The quotation for home-prepared dried blood is unchanged.

MISCELLANEOUS CHEMICAL MARKET

In the alkali trade demand generally is good for all the staples. More business is doing for export in caustic soda at the prices—current quotations for caustic soda are as follows: Liverpool, 77%, £9. 15s.; 74%, £8. 10s.; 70%, £7. 10s.; 66. 10s.; cream, 60%, £6. 7s. 6d. per ton, 10-ton lots and 10 Bleaching powder has been slightly easier for spot delivery at £7 to £7. 5s. per ton, f.o.b., hardwoods, and £7. to £7. 2s. 6d. for softwoods, f.o.r. makers' works. In alkali, 58%, and soda ash there is no improvement in values. Soda crystals are still weak, the make is in excess of demand. For chlorates of potash and prices are respectively 4½d. and 6½d. per lb., but there are none at ½d. to ½d. per lb. less. Sulphur continues quiet at £3. 12s. 6d., f.o.r. Saltcake is scarcer and dearer at 14s. 10d. ton, f.o.r., in the Lancashire district. Sulphate of copper is in request at £15. 5s., f.o.b. Sulphate of iron is also in more demand at improved prices. In acetate of lime business is quiet, quotations remain steady at £5. 15s. per ton for brown, and £4 for grey, in usual districts of consumption. Other acetates are depressed. Superphosphate of lime and nitrate of soda and fertilizers are just now in active demand, and prices are firm. powdered arsenic continues scarce, and price is firm at £14. £14. 15s. per ton, at Garston. For potash, caustic and carb prices are well maintained. Prussiate of potash 9½d. to 9¾d. Carbolic acids, crystal and liquid, are neglected. In miscellaneous chemicals generally low values are ruling, and in all distillate branches of manufacture a quiet state of trade is reported.

LIVERPOOL MINERAL MARKET.

Our market has continued brisk, and prices generally have maintained their firm tone. Manganese ore: There have been no further arrivals and prices remain unchanged. Ground manganese is in strong demand at £6., £8., £10., and £12., according to quality. Manganese iron ore: Grecian, 15s. to 16s. per ton; Spanish, 16s. to 17s. per ton, c.i.f., in cargoes. Bauxite, Irish Hill brand: There is for this continues strong, shipments from the mines being fairly this week; prices are unaltered at 20s. for first quality, 16s. for quality, and 12s. for thirds, f.o.b. Chrome ore: There have small arrivals this week, which have all gone straight into consumers and prices remain strong at 65s. to 70s. per ton for 40% and 11s. ton for 50% ore. French chalk: There have been fair arrivals this week, the greater portion of which have gone direct to consumers stocks are further reduced; prices are 70s., 80s., 90s., and 11s. ton for "Angel White" and "Gold Medal" qualities, the finer grades being in very strong demand. Tungsten metal at 1s. 9d. to 1s. 10d. per lb. Ferro-tungsten at 1s. 11d. per lb. Plumbago is in good demand at £6. per ton for qualities suitable for foundries, grades being £8. to £10. per ton, according to quality. Fallen continues steady, without alteration. Arsenic is scarce at from £1 to £17. per ton. Ochres still continue steady: French J.C. at 6s. ton, and other brands according to quality. Bog ore (hydrate of iron): There have been small arrivals this week, but the demand continues good. Fluorspar: There has been a strong demand for finer qualities of the "G.G.B." brand, and also for the lam crushed.

THE METAL MARKET.

LONDON, WEDNESDAY.—Pig iron, firm: Scotch warran at 41s. 10d., Middlesbrough 34s. 5½d. cash, and hematite 41s. Copper, firm: Chili bars, G. O. B.'s and G. M. B.'s, at £39. 6s. 3d. to £39. 11s. 3d. cash, and £39. 13s. 9d. to £39. 14s. three months. Tin, firm: Straits closed at £62. 5s. to £62. 10s. and £62. 15s. to £63. 5s. three months; Australian, £63 strong; Spanish, £9. 17s. 6d. to £10.; English, £10. to £10. 10s. Silesian spelter: ordinary, £13. 15s. to £13. 17s. 6d. Nickel, 10s. Antimony, £31. 10s. Quicksilver: first hands, £6. 10s.; second £6. 9s. Copper shares, steady: Cape, 1½d. to 1¾d.; Copiapu, 1½d.; Libiola, 3½d. to 3¾d.; Mason and Barry, 1¾d. to 1½d.; Rio 13½d. to 13¾d.; Tharsis, 4¾d. to 4½d.

LIVERPOOL OIL AND COLOUR MARKET

OILS.—Palm oil is fairly firm, but the business doing is small, chiefly in Lagos at £20. 10s. and Cameroon at £19. Olive is steady, and in fairly good demand at satisfactory prices. Linseed, though easy, is quiet at 20s. 9d. to 21s. 6d. per cwt. Liverpool makes in export casks. Cottonseed is still quiet.

d quoted 17s. 3d. to 18s. per cwt. Castor oil is firm in on: good seconds Calcutta and first pressure French 2½d. per lb., the former being very scarce. Tallow inquired for, South American having been sold at t., ex quay. Resin, owing to scarcity, is firm, and ½d. is obtainable for common, to arrive, while on spot are firmly held for full prices. Spirits of turpentine 9d. per cwt., holders being firm. Petroleum is strong, 11 maintained at 5½d. to 7d. for American, according 17½d. per gallon for Russian refined.

are steady, without alteration in prices. dshire, common, £10., medium, £12., best, £15., nmon, 40s.; medium, 50s., best, 60s.; Welsh, best, 50s., and common, 18s.; Irish, Devonshire, 40s. to J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. UMBER: Devonshire, 50s. to 55s. White lead, £16. Red lead enetian red, £6. to £10. Cobalt; Prepared oxide, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2, of iron: Common, £7.; medium, £10.; finest, £20. 10s. to £25.

T OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

ness on the part of the shale distillers to realise at once steadily lower the figures for sulphate of ammonia so on of the sulphate market is concerned. The same infelt probably on through April, though not in the same chief producers of sulphate close their books as at e a few affect a date later by about a month for that article, by the more hurried sellers, has been done down

e prospect of an advance in Scotch burning oil, follow- prices asked for by the importers of petroleum; but the exceedingly risky one at the best, and the Scotch yet to do much consultation amongst themselves before action will be taken before the end of April, if then.

is quoted easier, and the other ordinary chemicals are lk, even if nominally unbroken in price. The attitude ation only, and Spring shipment enquiries continue to e force.

current are:—Soda crystals, 35s. nett, Tyne; 52°, £3. 15s. to £4. 5s. nett, Tyne; white alkali, to £5. 5s. nett, Tyne; alum in lump, £5. 10s. nett, ic soda, white, 74° £8. 15s., 70/72° £7. 12s. 6d., 60/62° d cream 60/62° £6. 10s., all nett, Liverpool; bleaching s to £7., nett, Tyne; saltcake, 17s. 6d.; borax, English and boracic acid, £30. nett, Glasgow; bicarbonate of sks £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; otash, 4½d. nett, for Scotch and English deliveries (for et, f.o.b. Glasgow); bichromate of soda, 3¾d. nett, for glish deliveries (for export, 3½d. nett, f.o.b. Glasgow); h, 4¾d. less 5%, Liverpool; nitrate of soda, 9s. 1½d.; sul- ia, £10. 15s. to £10. 16s. 3d. prompt f.o.b. Leith; salt and second white, £39. and £37. nett, any port, per, £15. 5s. less 5%, Liverpool; paraffin scale, hard, 1½d. to 2½d. per lb.; paraffin wax 120° semi-refined, paraffin spirit (naphtha), 4½d. per gallon; paraffin oil at works, for Scotch buyers (English sales, ½d. to litto (lubricating) 865° £4. 5s.; 885° £4. 10s. to £5., 5s. to £5. 10s. Week's imports of sugar at Greenock s beet unrefined, and 400 bags beet refined.

PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

e situation here, which was so straitened a week ago, ately relaxed upon the arrival of a cargo of linseed, which 13,656, qrs. from Rosario. The imports into Hull the same time a year ago have been: Linseed, against 125,601 qrs; rapeseed, 24,743 qrs., against ottonseed, 59,667 tons, against 67,178 tons; olive oil, inst 4,354 tons; rape oil, 3,098 casks, against 1,984 s, 3,614 tons, against 6,728 tons; tallow, 2,791 cwt.s., wts.; turpentine, 2,981 barrels, against 4,196 barrels. is been exceedingly flat on the spot, and value has re- 5s. per ton, there being sellers at 19s. 1½d. naked. oted 18s. 7½d.; May-Aug. worth 18s., and Sept.-Dec., led and refined ditto worth from £1. to £2. per ton for the week, 1,400 cwt.s. Refined cotton oil about 5s. closing dull at 15s. 4½d., naked, spot; March-April, and May-Aug., 16s. Casks 17s. 6d., and ordinary r ton extra. Export of refined for the week, 6,900 cwt.s.

Olive oil remains about original value, and spirits of turpentine are quoted here at 23s. 6d. per cwt. Cod oil will be a poor market in anticipation of the struggle in the boot industry, £16. to £18. per ton. Castor oil of a receding value, 2½d. per lb. for first pressure. Sod oil, for curriers, etc., slow sale. Boiled drying oil, £12. per ton. Soft soap, 14s. 6d. per cwt.

CAKES.—Ready linseed cakes not plentiful, but with a fair supply in prospect, prices are somewhat easier: 95%, pure, £6. 12s. 6d. to £6. 15s. per ton; oilcakes, £5. 12s. 6d. per ton; Russians, £6. 5s. to £6. 10s. per ton; German, £6. 2s. 6d. to £6. 5s. Cotton cakes quiet but steady: best makes £3. 7s. 6d. to £3. 10s.; seconds, £3. 7s. 6d. per ton. Rape cakes unchanged.

PAINTS.—The situation and prices are unchanged. Prices are: Red and white leads in good sale, but value unchanged. Ready mixed paints in lever tins from £25. per ton. Venetian red, oxide of iron, black, blue, green and yellow ochre paints, from £12. per ton. Paint remover, 25s. to 30s. per cwt. Ultramarine from 3d. to 8d. per lb. Lime blue, £16. per ton. Imperial black varnish in good demand, at £5. 10s. per ton in barrels. Oak varnish from 5s. 6d. per gallon. Copal varnish from 7s. per gallon.

TYNE CHEMICAL REPORT.

TUESDAY.

The chemical trade is slightly better as far as the demand goes, high strength caustic soda being principally in request: 76/77% is quoted at £9. 10s., 70% £7. 15s. per ton. Bleach £7. 5s. Sulphur scarce, at £4. 5s. Other articles unchanged.

Bleaching Powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, nett; caustic soda, 76/77%, £9. 10s. per ton, nett; do., 70%, £7. 15s. per ton, nett; recovered sulphur, 2 cwt. bags, £4. 5s. per ton, nett; soda ash, 48%, £3. 15s. per ton, nett; do., 52%, £4. 2s. 6d. per ton, nett; do., 56%, £4. 10s. per ton, nett; alkali, 36%, £2. 15s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. 15s. per ton, nett; do., 52%, £5. 5s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. per ton, nett; do., 1 cwt. kegs, £6. 12s. 6d. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £1. 16s. 6d. per ton, nett, gross weight; do., 2 cwt. bags, £1. 16s. 6d. per ton, nett, nett weight; chlorate of potash, 5½d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £4. 2s. 6d. per ton, nett; blanc fixe, £7. 10s. per ton, nett; chloride of barium, £7. 10s. per ton, nett; carbonate of alumina, £28. 15s. per ton, nett; aluminate of soda, £33. 15s. per ton, nett; in 5 ton lots, £28. 10s. per ton, nett.

SALT.—South Durham salt is quiet at from 9s. to 9s. 6d. per ton, f.o.b. Tees.

COALS.—Trade is steady. The uncertainty as to forward delivery of Welsh coal is apparently driving more business to the Tyne, though buyers and sellers are still at variance as to prices that should rule for the season's contracts. Quotations are:—Best Northumbrian steam, 8s. 9d. to 9s. per ton; second qualities, 7s. 9d. to 8s. per ton; small steam, 3s. to 3s. 6d. per ton; gas coals, quiet, 6s. 9d. to 7s. 6d. per ton. Coke, rather steadier, 13s. to 13s. 6d. per ton. Bunker coals, in demand, 6s. 9d. to 7s. per ton.

New Companies.

Ellison and Mitchell, Ltd.—CAPITAL £12,000., in shares of £10. each. This company has been formed to purchase the works of Messrs. Ellison and Mitchell, near Rotherham, and to trade as chemical manufacturers, tar distillers, refiners, etc. The subscribers to the memorandum of association are:—H. Ellison, Cleckheaton, tar distiller; H. Ellison, junr., Cleckheaton, manufacturing chemist; Mrs. M. A. Ellison, Cleckheaton; G. W. Mitchell, Kilnhurst, near Rotherham, foreman; Mrs. E. Mitchell, Kilnhurst, near Rotherham; J. T. Worth, Swinton, near Rotherham, book-keeper; J. F. Dyson, Queen-street, Huddersfield, chartered accountant.

Mear and Green, Ltd.—CAPITAL £100,000., in £10. shares. This company has been formed to acquire the business of borax and boracic acid manufacturers, carried on by Messrs Mear and Green, at Kilds-grove, Tunstall, and Connah's Quay, Flint. The company will also trade as manufacturing chemists, drysalters, oil and colourmen, &c. The subscribers to the memorandum of association are:—S. Mear, Longton, Staffs, timber merchant; A. Mear, Longton, china manufacturer; J. T. Mear, Longton, china manufacturer; G. C. Kent, Longton, solicitor; T. G. Green, Burton-on-Trent, earthenware manufacturer; T. S. Green, Burton-on-Trent, earthenware manufacturer; H. G. Green, Burton-on-Trent, gentleman; R. T. Green, Burton-on-Trent, earthenware manufacturer.

British Columbia Oil and Guano Co., Ltd.—CAPITAL £20,000., in £5. shares. This company has been formed to manufacture and deal in all kinds of guano, oils, fats, fertilizers, bone products, etc. The subscribers to the memorandum of association are:—H. G. Nicholson, 23, Birchin-lane, E.C., underwriter; H. S. Pears, 79½, Gracechurch-street, E.C., tea importer; J. Richardson, Forest Gate, E., secretary; R. C. Lepper, 35, Brooke-road, N., agent; A. R. Braine, Ilford, clerk; E. E. Hill, 4, Chatham-road, South Woodford, underwriter; E. A. Longley, 8, Tachbrook-street, S.W., broker.

The Patent List.

This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

Manufacture of Ferrocyanides from Sulphocyanides. C. W. Watts. 4,556. March 4.
Employing Aniline Colours for Colouring Paints, Varnishes, or India-rubber. A. G. Green. 4,594. March 4.
Treating Gold and Silver Ores. A. de Courcy Scott. 4,595. March 4.
Electro Deposition of Iron on Copper, etc. A. Hiorus. 4,660. March 5.
Improvements in Transportation Vessels for Acids and Corrosive Fluids. C. Kramer. 4,684. March 5.

Improvements in Coke Ovens. W. Ure and S. T. Crosswell. 4,720. March 6.
Manufacture of Materials for the Purification of Gas or Sewage. Campbell. 4,799. March 6.
Extracting Gold and Silver Ores. B. H. Thwaite and T. J. Denney. March 7.
Improvements in Manufacture of Sulphuric Acid. N. P. Pratt. March 7.
Artificial Fuel. G. Haycraft. 4,870. March 7.
Retort for Distilling Gum and Resin and other Heavy Bodies. Kuess. 4,882. March 7.
Artificial Manure. S. Mikovinyi. 4,893. March 7.
Indirect Electrolysis. E. Andreoli. 4,930. March 8.
Reduction and Extraction of Metals. J. B. Torres. 5,000. March 9.

Gazette Notices.

PARTNERSHIPS DISSOLVED.

A. BANKS and J. SYKES, under the style of Banks, Sykes and Co., dry chemical and soap manufacturers, Heckmondwike.
J. ORMEROD, W. H. ORMEROD, J. P. ORMEROD, J. ORMEROD, JUNIOR, T. P. ORMEROD, tanners, Castleton, near Manchester, under the style of J. Ormerod and Sons, as far as regards J. Ormerod.

BANKRUPTCY ACTS, 1883 and 1890.

Adjudications.

MOTLOW, JOSEPH HENRY, and MOTLOW, BERT (trading as Motlow and Bilton, galvanisers).
POPFLEWELL, SARAH, and POPPLEWELL, HERBERT (trading as John Popplewell, Mirfield oil extractors).

IMPORTS OF CHEMICAL PRODUCTS

AT

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending March 9th.

Acetate of Lime—
U. States, 1,211 bgs. Lister & Biggs
" 187 pkgs. H. Wallace & Co.

Acetic Acid—
Germany, 140 pkgs. A. & M. Zimmermann
Holland, 20 Philipps & Graves
Belgium, 2 Leach & Co.

Acetone—
Holland, 5 pkgs. A. & M. Zimmermann

Alkali—
France, 205 c. P. Hecker & Co.
Belgium, 380 Arnati & Harrison

Ammonia—
Holland, 13 cs. Little & Johnston

Antimony—
Japan, 5 t. L. & I. D. Jt. Co.
Sydney, 34 Vivian, Younger & Co.

Antimony Ore—
Victoria, 17 Bk. of N. S. W.
Melbourne, 100 t. Pillow, Jones & Co.
Sydney, 12 H. Bath & Son
" 10 J. Ramber

Asbestos—
Italy, 6359 Brit Asbestos Co.
" 1,180 W. Byford

Barytes—
Germany, 16 cks. J. L. Lyon & Co.
" 22 Prop. Scott's Wf.
Belgium, 79 J. L. Lyon & Co.
" 19 W. Harrison & Co.
Germany, 19 P. Jantzen
Belgium, 38 Burrell & Co.
" 60 Magee, Taylor & Co.

Bleaching Powder—
Belgium, 89 pkgs. H. Wallace & Co.
" 89 E. J. & W. Goldsmith

Bone Meal—
E. Indies, 778 t. Fox, Roy & Co.
" 150 A. Hunter & Co.

Boric Acid—
Italy, 12 cks. J. E. Malder

Camphor—
Germany, 3 pkgs. L. & I. D. Jt. Co.

Caoutchouc—
France, 24 c. Girard Bns. & Co.
Germany, 58 Wallace Bns. & Co.
" 270 W. Balchin
Zanzibar, 10 Forbes, Forbes & Co.
Lamu, 11 L. & I. D. Jt. Co.
France, 65 Procter Bns. & Co.
Germany, 6 Clarke & Smith

France, 20 Anderson, Weber & Smith
Zanzibar, 8 Hale & Son

" 74 L. & I. D. Jt. Co.
" 74 Clarke & Smith
Madagascar, 13 S. Figgis & Co.
France, 10 Prop. Bull Wf.

" 72 Huttenbach & Co.
Madagascar, 37 Blyth, Greene & Co.
Canaries, 30 pkgs. Elder, Dempster & Co.

Castor Oil—
Italy, 5 cs. Langton, Edden & Co.

France, 3 W. G. Frith & Co.
E. Indies, 20 Ross & Deering
Italy, 13 City Coml. Wf., Ltd.

France, 20 brls. Snowden, Sons & Co.
" 55 Anderson, Weber & Smith

" 59 Lufas & Spencer's Wf., Ltd.
E. Indies, 32 cks. J. Owen
France, 19 W. H. Mitchell
Belgium, 74 Fuerst Bns. & Co.

E. Indies, 200 cs. Anderson, Weber & Smith
Italy, 5 Potter & Clarke

Caustic Potash—
Belgium, 100 c. Petri Bns.

Caustic Soda—
E. Indies, 28 c. Henderson Bns.

Chemicals (otherwise undescribed)
Germany, 12 cs. 55 pkgs. A. & M. Zimmermann
" 29 T. H. Lee
Belgium, 8 pkgs. Philipps & Graves
Holland, 2 cks. G. Rahn & Co.

Norway, 7 W. Caudery & Co.
Germany, 18 L. & I. D. Jt. Co.
" 15 Hernu, Peron & Co.

Germany, 12 pkgs. A. Willcox
Belgium, 10 L. C. & D. Rly.

Copperas—
Germany, 20 pkgs. Dicketts & Co.

Cream of Tartar—
Germany, 3 cs. T. H. Lee
Spain, 2 cks. 5 pkgs. W. C.

Holland, 63 Kirkpatrick & Co.
France, 23 W. C. Bacon & Co.
" 5 M. Ashby, Ltd.
France, 1 C. Blackmore & Co.

Holland, 10 B. & F. Wf. Co.
" 4 "

Creosote—
Belgium, 1 dm. H. Lorentz

Cyanide—
Holland, 46 cs. F. Boehm

Dextrine—
Germany, 10 pkgs. J. Barber & Co.

Dyestuffs—
Aniline
Holland, 3 pkgs. G. Rahn & Co.

Anthracene
Holland, 82 pkgs. Burt, Boulton & Co.

Argols
Italy, 28 pkgs. Thames S. T. & L. Co., Ltd.

Cochineal
Canaries, 22 pkgs. L. & I. D. Jt. Co.
" 15 J. W. Borland
" 6 W. Dutton & Co.

Cute's
Singapore, 51 pkgs. R. & J. Henderson

Divi Divi
E. Indies, 64 pkgs. Culverwell, Brooks & Co.

Extracts
Germany, 36 pkgs. T. H. Lee
Holland, 1 Loder, Son & Co.
France, 200 L. J. Levinstein & Sons

Belgium, 20 Leach & Co.
Ceylon, 18 Dalton & Young

Gambler
Singapore, 490 bgs. Beresford & Co.

" 3,111 bls. W. Balchin
" 250 pkgs. 234 L. & I. D. Jt. Co.

" 507 R. & J. Henderson
" 1,184 Ross & Deering
" 914 McDougall & Bonthron

Indigo
E. Indies, 15 cts. Herrmann & Co.

" 404 P. & O. Co.
" 76 Arbuthnot, Latham & Co.

" 37 pkgs. Williams, Torrey & Co.
" 491 L. & I. D. Jt. Co.

" 3 W. E. Bott & Co.
" 333 Ross & Deering
" 19 F. Claydon & Co.

" 98 J. Owen
" 12 F. Huth & Co.
" 20 Parsons & Keith
" 19 Melchers, Runge & Co.

" 10 H. J. Feribach & Co.
Germany, 5 3/4 arms. Elkan & Co.

E. Indies, 224 A. B. Curtis & Co.
" 5 Cayzer, Irvine & Co.
" 5 Gray, Dawes & Co.
" 298 Park, Macfadyen & Co.

" 83 Croysdale
" 76 Parry
" 31 Thomsen

" 38 R. Von Gleditsch
" 49 Wrightson
" 9 Blyth, Greens
" 9 Langstaff

" 124 F. W. Helgers
" 30 E. Bower
" 25 Stansbury
" 16 Bal
" 14 Haefliger, H.

France, 18 pkgs. J. L.

Myrabolams
E. Indies, 1,340 bgs. Baxter & Co.

" 1,637 Arlbaum, J.

" 1,000 L. & I. D. Jt. Co.
" 1,336 pkgs. P. & L. & I. D. Jt. Co.

Bombay, 1,045 L. & I. D. Jt. Co.

Orchella
Ceylon, 58 bgs. Hours, W.

" 7 bls. Anderson, W.

Shumac
Italy, 500 bgs. —

Tanner's Bark
Durban, 20 t. Dyster, Nalder
Adelaide, 4 Bessenden
" 67 Brown & Co.
Durban, 21 A. & W. N.

Turmeric
E. Indies, 146 bgs. L. & I. D. Jt. Co.
" 99 pkgs. J. P. Alper

Valonia
A. Turkey, 40 t. A. & W. N.

" 30 Adam
" 5 Hicks, Nash & Co.
" 50 J. G.
" 10 Anning & Co.
" 1 G. S. N.
" 40 W. H. M.

Farina—
Germany, 20 pkgs. R. G. Hall & Co.

French Chalk—
Italy, 440 C. F. Gleditsch

Gamboge—
Singapore, 22 cs. L. & I. D. Jt. Co.

Glucose—
U. States, 1,000 pkgs. 1,000 c. A. B. Curtis & Co.
" 50 275 c. Union L. & Co.
" 1,360 2,380 E. G. N.
Holland, 40 40 Prop. Bull Wf.

es, 100 571 ———
50 300 Ohlenschlager
Brs.
296 610 L. Norman &
Co., Ltd.
500 500 L. & I. D. Jt.
Co.
4,375 9,786 L. Sutro & Co.
50 300 Page, Son, & East
500 500 Hoare, Wilson,
& Co.
y, 100 t. Anglo-Contl. G. Wks.
cetate—
y, 17 cks. A. P. Morris
y, 56 t. Goad, Rigg, & Co.
y, 50 Perkins & Homer
land, 4 Aust. Meat Co.
land, 10 Cornwell, Son, & Co.
Alcohol—
d, 100 crbys. Lister & Biggs
es, £210 W. M. Smith & Sons
622
45
es, 1,000 cks. 6,000 c. J. R. Francis
& Co.
250 1,365 J. Newcomb
303 1,650 L. Sutro & Co.
Oil—
d, 8 cks. Philipps & Graves
14,630 bgs. W. Montgomery
& Co.
12 cks. Beck & Pollitzer
y, 17 pks. Philipps & Graves
y, 1 cks. Pickford & Co.
25 cks. W. Harrison & Co.
7 M. D. Co.
2 J. L. Lyon & Co.
Acid—
y, 10 pks. W. Caudery
& Co.
Wax—
es, 136 brls. H. Hill & Sons
100 Prod. Brokers' Co.
2,385 665 pks. G. H. Frank
Anglo-American
Oil Co.
ate—
n, 100 t. Arnati & Harrison
ate of Lime—
n, 200 t. T. Farmer & Co.
60 Hainmond & Co.
ate Rock—
n, 150 t. Sawyer, Sons, & Co.
es, 32 cks. E. Simpson
30 brls. A. E. Muller
y, 78 W. Hirst
ago—
211 cks. J. Thredder, Son,
& Co.
225 R. G. Hall & Co.
es, 96
75 brls. Cayzer, Irvine,
& Co.
100 bgs. B. Gallaway
ium Bicarbonate—
d, 80 c. A. & M. Zimmer-
mann
ium Carbonate—
y, 110 c. Carey & Sons
80 J. A. Reid
ium Chlorate—
m, 200 bgs. 200 pks. Union
L. Co., Ltd.
ium Cyanide—
ny, 5 c. L. & I. D. Jt. Co.
20 pks. Beresford & Co.
ium Permanganate—
d, 12 cks. J. Barber & Co.
Stone—
8 t. O'Hara & Hoar
17 c. L. & I. Dk. Co.
2 t. Blundell, Spence,
& Co.
31 c. G. P. Nightingale
ilver—
5,000 brls. W. N. Rothschild
& Son
69 brls. J. Watt & Son
tes, 150 H. Hill & Sons
tre—
ny, 134 cks. P. Hecker & Co.

E. Indies, 251 bgs. Co-op. Lightgr.
Association
" 1,728 Lucas & Spencer's Wf.
Silica—
Germany, £100 A. Haacke & Co.
Sodium Hyposulphite—
Germany, 186 kgs. F. Boehm
Sodium Phosphate—
Germany, 12 pks. Kirkpatrick & Co.
Starch—
Holland, 100 pks. Little & Johnston
Belgium, 371 T. H. Lee
" 184 F. Claydon & Co.
" 200 Lowe, Sons, & Oakley
Holland, 402 Vokins & Co.
" 107 Philipps & Graves
" 400 Langstaff & Co.
" 200 Magee, Taylor, & Co.
" 40 H. Johnson & Sons
Germany, 960 Horne & Co.
France, 400 Prep. Scott's Wf.
Germany, 500 L. Sutro & Co.
Holland, 20 J. Barber & Co.
Belgium, 80 Leach & Co.
Stearine—
Holland, 64 bgs. H. Hill & Sons
U. States, 10 cks. L. & I. Dk. Co.
Sulphur—
Italy, 5 t. J. Puddy & Co.
" 5 Hyslop & Symonds
" 5 Thames S. T. &
L. Co., Ltd.
" 16 J. Kitchen, Ltd.
" 25 G. Poor & Co.
France, 8 Magee, Taylor, & Co.
Superphosphate of Lime—
Belgium, 50 t. Lawes Chemical
Manure Co.
Talc—
E. Indies, £10 J. W. Cook & Co.
Tallow and Stearine—
Belgium, 5 cks. Fuerst Brs.
Tartar—
E. Indies, 12 pks. Fellows, Morton,
& Co.
Italy, 1 cks. B. & N. Wf. Co.
" 395 Howards & Son
Tartaric Acid—
Italy, 40 pks. 20 cks. B. & F.
Wf. Co.
Holland, 4 cks. Kirkpatrick & Co.
20 pks. B. & F. Wf. Co.
Ultramarine—
Holland, 8 cks. Philipps & Graves
Belgium, 19 pks. 10 brls. Leach & Co.
" 3 W. Harrison & Co.
Holland, 2 cks. H. Lambert
France, 4 brls. C. J. Langmead
Varnish—
France, 15 pks. Flageollet & Co.
U. States, 10 Beck & Pollitzer
Belgium, 44 Allan Brs. & Co.
" 5 Wilson & Co.
Vermilion—
Germany, 3 pks. Haefner, Hilpert,
& Co.
White Lead—
France, 19 cks. J. Watts & Sons
Wood Pulp—
Sweden, 80 pks. W. G. Taylor
& Co.
Norway, 609 Tough & Henderson
" 340 Johnsen & Jorgensen
France, 540 W. Balchin
Norway, 959 W. G. Taylor & Co.
Holland, 104 C. S. Lovell
Norway, 686 Becker & Co.
" 100 C. Christopherson & Co.
" 1,000 W. E. Bott & Co.
Canada, 5,103 E. J. & W. Goldsmith
Zinc Oxide—
Holland, 190 cks. Soundy & Sons
U. States, 205 brls. M. Ashby, Ltd.
" 50

LIVERPOOL.

Week ending March 7th.

Acetate of Lime—
New York, 739 bgs.
Albumen—
Bremen, 8 brls.
Naples, 9 bgs.
Asbestos—
Rotterdam, 3 cks.
Barytes—
Bremen, 33 cks.
Antwerp, 26 50 bgs.
Barytes Sulphate—
Rotterdam, 44 cks.

Benzol—
Philadelphia, 5,763 brls.
Bone Meal—
Bombay, 1,999 bgs.
Boric Acid—
Leghorn, 5 cks.
Candles—
Hamburg, 1 cs.
Caoutchouc—
Havre, 12 cs. Cunard S. S.
Co., Ltd.
Carbon Black—
New York, 70 brls. B. R. Vickers
& Co.
Castor Oil—
Calcutta, 1,500 cs. Ralli Brs.
" 350
Genoa, 19 Evans, Sons
& Co.
Leghorn, 10
Marseilles, 69 brls.
Chemicals (otherwise undescribed)
Baltimore, 50 cks. Richardson,
Phila.elpia, 18 Spence & Co.
Cod Oil—
Hamburg, 15 brls.
St. John's, Nfld., 931 cks.
Colours—
Hamburg, 50 cks. 22 cs.
Bremen, 9
Antwerp, 15 brls.
Cottonseed Oil—
New York, 100 brls.
Philadelphia, 500
N. Orleans, 880
Boston, 299
Cream of Tartar—
Barcelona, 40 cks.
" 10 Sacche &
Klemm
Dyestuffs—
Cochineal
Las Palmas, 10 bgs. Canary Islands
Trading Co.
Cutch
Rangoon, 3,574 bxs.
Divi Divi
Hamburg, 111 bgs.
Extracts
New York, 15 brls. W. Bingham
" 5 Emile Schwich
Bordeaux, 290 cks.
Philadelphia, 15
Havre, 14 cs. 29 Cunard S. S.
Co., Ltd.
Fustic
Baltimore, 578 ps.
Vera Cruz, * 1 542 R. B. Watson
& Co.
Tampico
Calcutta, 5,214 D. Midgley & Son
Indigo
Logwood
Savanna-La-Mar, 531 t.
Myrabolams
Bombay, 805 bgs.
Sumac
Barcelona, 100 bgs.
Palermo, 110 J. Kitchen
& Sons
" 1,125 25 brls.
Farina—
Havre, 750 sks. Cunard S. S.
Co., Ltd.
Amsterdam, 50 bgs.
Glucose—
Philadelphia, 203 brls.
New York, 188
Mineral—
Vera Cruz, 3,053 bgs. Bessler,
Waechter & Co.
Naphtha—
Philadelphia, 750 brls.
Ochre—
Cartagena, 50 t.
Oxalic Acid—
Rotterdam, 11 cks.
Paint—
Amsterdam, 10 dms.
Paraffin Scale—
New York, 3,244 brls. Thompson &
Bedford
Baltimore, 200
Paraffin Wax—
Rangoon, 202 bxs.
Philadelphia, 100 brls.
Phosphate Rock—
Port Royal, 2,600 t.

Pitch—
Dunkirk, 1 ck.
Potash—
Bremen, 26 cks.
Dunkirk, 48 dms.
Rouen, 72 Co-op. W'sale
Society, Ltd.
Pumice Stone—
Leghorn, 2 cks. 10 bgs.
Messina, 4
Rosin—
New York, 1,000 brls.
Charleston, 3,000
Savannah, 5,446
Salt—
New York, qnty.
Saltpetre—
Hamburg, 50 brls. 20 kgs.
Silver Sulphide—
Vera Cruz, 5 cs. Bessler,
Waechter & Co.
Soap—
New York, 650 bxs. R. Crooks
& Co.
Leghorn, 10 cs.
Starch—
New York, 300 bgs.
Hamburg, 148 cs.
Stearine—
Philadelphia, 295 tcs.
Antwerp, 36 bgs.
Sulphur—
Catania, 2,200 bgs. H Diaper
& Co.
" 1,100
Superphosphate—
Antwerp, 76 bgs.
Tartar—
Bordeaux, 10 cks.
Tartaric Acid—
Rotterdam, 3 cks.
Turpentine—
Savannah, 4,068 brls.
Ultramarine—
Hamburg, 6 cs.
Rotterdam, 2 cks.
Varnish—
Antwerp, 4 cks.
Waste Salt—
Hamburg, 102 bgs.
White Lead—
Antwerp, 14 cks.
Wood Pulp—
Gothenburg, 5 pks. G. Schen-
kenwold & Co.
" 8 Tullis & Co.
" 408 brls.
Zinc Ashes—
Marseilles, 17 brls.
Zinc Oxide—
New York, 100 brls.
Antwerp, 40
Marseilles, 69

MANCHESTER.

Week ending March 9th.

Acetic Acid—
Rotterdam, 2 cks.
Albumen—
Hamburg, 2 cs.
Antimony Fluoride—
Rotterdam, 10 cks.
Castor Oil—
Bordeaux, 86 cks. J. & P.
Hutchinson
Chemicals (otherwise undescribed)
Hamburg, 4 cks. 1 cs.
Rouen, 31
Colours—
Antwerp, 5 cs. 4 brls.
Rotterdam, 24 3 16 cks.
Hamburg, 3
Ghent, 6 2
Dextrine—
Hamburg, 50 bgs.
Dyestuffs—
Alizarine
Rotterdam, 1 bx. 12 cks. 4 cs. 23 brls.
Annatto
Bordeaux, 2 cks. J. & P.
Extracts
Rotterdam, 30 cks. Hutchinson
Farina—
Hamburg, 1,141 bgs.
Glucose—
Rotterdam, 4 cks.
Limestone—
Antwerp, 1 cs. 2 ccs.

Mineral White— Rouen, 200 bgs.	J. & P. Hutchinson
Pitch— Antwerp, 20 cks.	
Potash— Hamburg, 17 cks.	
Pyrites— Hamburg, 5	
Resin Oil— Hamburg, 2,750 t.	
Sodium— Hamburg, 1 cks.	
Starch— Antwerp, 132 cks.	
Sulphuric Acid— Rotterdam, 10 cks.	
Tartar— Bordeaux, 2 cks.	J. & P. Hutchinson
Tartaric Acid— Rotterdam, 12 cks.	
Ultramarine— Antwerp, 4 cks.	
Wood Pulp— Rotterdam, 68 bls.	
Zinc Oxide— Antwerp, 80 bls.	

HULL.

Week ending March 9th.

Acid— Rotterdam, 7 cks.	Hutchinson & Son
Aniline Colours— Amsterdam, 2 kgs.	W. & C. L. Ringrose
Asbestos— Genoa, 6 bls.	
Barytes— Antwerp, 19 cks. 100 bgs.	Bailey & Leatham
Breman, 24	Veltmann & Co.
" 13	Storry, Smithson & Co.
" 24	Trent Naviga- tion Co.
" 23	Hanger, Watson & Harris
" 42	Johnson Bros.
" 49	100 H. F. Padsey
Castor Oil— Leghorn, 20 cks.	Wilson, Sons, & Co., Ltd.
Genoa, 10	
Chemicals (otherwise undecorated) Hamburg, 12 cks.	Wilson, Sons, & Co., Ltd.
Bremen, 3 cks.	Veltmann & Co.
Marseilles, 8	Wilson, Sons, & Co., Ltd.
Cod Oil— Alesund, 93 bls.	Wilson, Sons, & Co., Ltd.
Bergen, 52	"
Colours— Rotterdam, 1 cks. 1 cs. 14 pkgs.	Wilson, Sons, & Co., Ltd.
Hamburg, 6	Wilson, Sons, & Co., Ltd.
Antwerp, 6	Wilson, Sons, & Co., Ltd.
Hamburg, 3	
Rotterdam, 7 cks. 4 cs. 19 bgs.	Hutchinson & Son
" 28 cks. 113 pkgs.	W. & C. L. Ringrose
Cream of Tartar— Rotterdam, 2 cks.	W. & C. L. Ringrose
Dextrine— Hamburg, 30 bgs.	Wilson, Sons, & Co., Ltd.
Dyestuffs— Allzarine Rotterdam, 69 bls.	Hutchinson & Son

11 103 cks.	W. & C. L. Ringrose
Extracts Ghent, 110 cks.	Wilson, Sons, & Co., Ltd.
Logwood MonceCh'isty, 1,400 t.	
Madder Rotterdam, 2 cks.	Hutchinson & Son
Farina— Ghent, 296 bxs.	Wilson, Sons, & Co., Ltd.
Glucose— New York, 400 bls.	
Amsterdam, 60 bgs.	
Limestone— Antwerp, 1 crt.	Wilson, Sons, & Co., Ltd.
Manganese Oxide— Rotterdam, 1 bl.	Hutchinson & Son
Ochre— Marseilles, 43 bls.	Wilson, Sons, & Co., Ltd.
Paint— New York, 45 cs.	Wilson, Sons, & Co., Ltd.
Phosphate— Ghent, 200 t.	Wilson, Sons, & Co., Ltd.
Pitch— Antwerp, 15 cks.	Bailey & Leatham
Rotterdam, 42	W. & C. L. Ringrose
Potash— Antwerp, 37 dms.	Wilson, Sons, & Co., Ltd.
Dunkirk, 65 pkgs.	"
Pumice Stone— Leghorn, 15 cks.	Blundell, Spence, & Co.
20 bls.	
Resin— Savannah, 750 bls.	
Saltetre— Hamburg, 10 kgs.	Wilson, Sons, & Co., Ltd.
Soap— Marseilles, 15 cs. 10 dms.	Wilson, Sons, & Co., Ltd.
Starch— Antwerp, 80 cs.	Bailey & Leatham
Rotterdam, 160	W. & C. L. Ringrose
Amsterdam, 12 bxs.	
Bremen, 889	Veltmann & Co.
Tartaric Acid— Rotterdam, 3 cks.	W. & C. L. Ringrose
Treacle— New York, 400 cks.	Wilson, Sons, & Co., Ltd.
" 50 bls.	
Turpentine— Savannah, N., 2,710 bls.	
Ultramarine— Antwerp, 4 cks.	Bailey & Leatham
Bremen, 8	
Varnish— New York, 2 bxs.	
Waste Salt— Hamburg, 509 bgs.	Wilson, Sons, & Co., Ltd.
318	Bailey & Leatham
White Lead— Antwerp, 75 cks.	Bailey & Leatham
Rotterdam, 27	W. & C. L. Ringrose
Ghent, 9	
Zinc Oxide— Antwerp, 32 cks.	Bailey & Leatham
Zinc White— Amsterdam, 1 cks.	W. & C. L. Ringrose
Antwerp, 50 bls.	Sissons Bros. & Co.

GLASGOW.

Week ending March 14th.

Albumen— Hamburg, 10 cks. 2 cs.	
Aniline Colours— Hamburg, 55 cks. 3 cs.	

Arachide Oil— Rotterdam, 1 cks.	
Bone Meal— Bombay, 6,000 bgs.	
Candles— Hamburg, 1 cs.	
Castor Oil— Antwerp, 28 cks.	
Marseilles, 201 bls.	
Cellulose— Hamburg, 200 bls.	
Chemicals (otherwise undecorated) Hamburg, 4 cs.	
Cream of Tartar— Marseilles, 24 cks.	
Dyestuffs— Allzarine Rotterdam, 132 pkgs.	
Argols Bordeaux, 21 bgs. 59 cks.	
Extracts Rouen, 21 cks.	
Antwerp, 5	
Logwood Jamaica, 443 t.	Mucklow & Co.
Madder Marseilles, 11 cks.	
Farina— Hamburg, 100 bgs.	
Guano— Bona, 13 t.	Crookston Bros.
Ochre— Rouen, 3 cks.	
Marseilles, 76	
Paint— Boston, 20 cs.	
Painters' Colours— Antwerp, 4 cs.	
Hamburg, 5	1 cks.
Rotterdam, 1 cs. 20 bls.	J. Rankine & Son
35 pkgs.	
Pitch— Hamburg, 8 cs.	
Potash— Rotterdam, 60 cks.	J. Rankine & Son
Pyrites— Huelva, 1,858 t.	Tharsis Co.
Saltetre— Hamburg, 20 cks. 40 kgs.	
Soap— Newport News, 240 bls.	W. T. Geddes Risk & Forsyth
Soda Salts— Rouen, 8 cks.	
Sodium Bifluoride— Hamburg, 1 cks.	
Sodium Prussiate— Antwerp, 6 cks.	
Starch— Rotterdam, 82 bxs.	
Stearine— Drontheim, 1 bl.	
Antwerp, 13 bgs.	
Tartar— Bordeaux, 28 cks.	
Ultramarine— Hamburg, 2 cks.	
Varnish— Rouen, 6 cks.	
Waste Salt— Hamburg, 610 bgs. 134 cks.	
Whiting— St. Valery-en-Caux, 61 cks.	
Wood Pulp— Drontheim, 80 bls.	
Rotterdam, 69	J. Rankine & Son
Christiania, 2,004	
Arendal, 15	
Zinc Oxide— Antwerp, 25 cks.	
Zinc Sulphate— Rotterdam, 6 bls.	J. Rankine & Son

TYNE.

Week ending March 9th.

Alum Earth— Hamburg, 17 cks.	Tyne S. S. Co.
Barium Chlorate— Rotterdam, 250 bgs.	Tyne S. S. Co.
Candles— Hamburg, 1 cs.	Tyne S. S. Co.

Cod Oil— Trondhjem, 10 bls.	
Bergen, 9	
Colours— Hamburg, 1 cks.	Tyne S. S.
Rotterdam, 1 bl.	
Antwerp, 2	
Glucose— Hamburg, 7 cks.	Tyne S. S.
Limestone— Antwerp, 5 cts. 1 cs.	S. S.
Magnesia— Hamburg, 3 cs.	Tyne S. S.
Paint— Laurvig, 7 pkgs.	
Pumice Stone— Hamburg, 33 cs.	Tyne S. S.
Pyrites— Huelva, 4,758 t.	Scott
Saltetre— Hamburg, 3 cks.	Tyne S. S.
Soap— Rotterdam, 3 cs.	Tyne S. S.
Starch— Rotterdam, 200 cs.	Tyne S. S.
Stearine— New York, 25 bls.	C. Han
Tartaric Acid— Rotterdam, 5 cks.	Tyne S. S.
Ultramarine— Rotterdam, 1 cks.	Tyne S. S.
White Lead— Antwerp, 128 bls.	Tyne S. S.
Wood Pulp— Laurvig, 139 bls.	
Arendal, 110	
Gothenburg, 40	
Zinc White— Rotterdam, 100 cks.	Tyne S. S.

GOOLE.

Week ending March 6th.

Alkali— Hamburg, 6 cks.	
Calais, 2	
Aniline Dyes— Hamburg, 2 cs.	
Ghent, 6 pkgs.	
Antimony— Boulogne, 3 cks.	
Colours— Hamburg, 31 cks. 8 cs.	
Rotterdam, 2	
Antwerp, 10	
Dyestuffs— Allzarine Rotterdam, 157 pkgs. 36 cks.	
Extracts Ghent, 80 cks.	
Logwood Hamburg, 97y.	
Madder Rotterdam, 3 cks.	
Dyestuffs (otherwise undecorated) Rotterdam, 465 pkgs.	
Boulogne, 47	1 cs. 20 cks.
Farina— Delfsdyhl, 200 bgs.	
Potash— Dunkirk, 15 dms. 10 cks.	
Calais, 21	
Saltetre— Rotterdam, 170 bgs.	
Hamburg, 20 cks.	

GRIMSBY.

Week ending March 9th.

Aniline Dyes— Hamburg, 8 pkgs.	
Cacouchou— Hamburg, 4 cs. 80 pkgs.	
Chemicals (otherwise undecorated) Hamburg, 15 pkgs.	
Colours— Antwerp, 28 pkgs. 36 cks.	
Hamburg, 47	
Starch— Antwerp, 52 cs.	

EXPORTS OF CHEMICAL PRODUCTS

OF

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

& ending March 13th.

LONDON.			Week ending March 13th.					
ending March 13th.								
me, 5 c.	£6							
la (Liquid) —								
um Carbonate —								
rk, 15 t. 10 c.	£460							
4 cks.	40							
um Chloride —								
me, 1 t. 4 c.	£29							
linople, 2 10	88							
1 13	58							
2	74							
10	19							
um Nitrate —								
6 t. 7 c.	£315							
um Sulphate —								
84 t. 2 c.	£727							
5	60							
50	575							
350 6	3,902							
Sulphate —								
8 cks.	£34							
Subnitrate —								
1 c.	£24							
lle, 10 c.	£12							
g, 10 cks.	74							
Soda —								
5 t. 2 c.	£40							
ay, 2 3	37							
as, 3 18	47							
8	8							
als (otherwise unrec.) —								
on, 5 c.	£20							
27 brls.	19							
7	18							
Janeiro, 14 pkgs	27							
own, 9	18							
am, 7	35							
of Lime —								
Bay, 1 c.	£12							
cid —								
ay, 1 c.	£6							
4	25							
5	30							
1	7							
5	32							
12 pkgs.	121							
7 cks	47							
10	60							
2 cs.	8							
rk, 19	120							
oducts —								
ne Oil								
racene	18 drs.	£430						
am, 760 cks.	£3,390							
ol								
am, 23 drs 40 pns	£458							
ilic Acid								
am, 48 cks.	£196							
14	50 drs.							
g, 40	249							
Tar Dyes								
6 pkgs.	£78							
ote Oil								
ncisco, 4,047 cks	£2,225							
thaline								
g, 7 cks.	£66							
1	11							
fin Wax								
67 bgs.	£148							
re, 1,000 bgs.	£333							
8, 12 cks.	11							
am, 7	20							
344 t.	599							
925	1,672							
1,550	2,623							
ay, 50 drs.	£9							
ay, 300	31							
e, 48 cks.	£118							
oducts (otherwise undes.) —								
5 —	£43							
linople, 4 t. 7 c.	£8							
Sulphate —								
linople, 2 t. 10 c	£40							
uz, 12 1	150							
ne, 5	80							
12 10	200							
Cream of Tartar —			Wellington, 6 c.					
Sydney, 2 t. 10			£23					
Melbourne, 4			162					
M. Video, 8			256					
Cairns, 8			32					
27			27					
Disinfectants —			Antigua, 2 cks					
£14			Dried Blood —					
Canaria, 12 t.		£96						
Manure —			Madeira, 20 t.					
£215			Lisbon, 6 2 c					
25			Genoa, 30					
120			Gothenburg, 89 3					
237			Canaria, 20					
72			Phosphoric Acid					
Philadelphia, 1 t 13 c.		£90						
Potassium Carbonate —			Philadelphia, 2 t. 3 c.					
£55			Potassium Chlorate —					
Ottawa, 10 c.		£23						
Potassium Cyanide —			Halifax, 2 c.					
£31			Potassium Iodide —					
Calcutta, 2 cs.		£51						
Potassium Prussiate —			Genoa, 3 cks.					
£77			New York, 12					
385			Rio de Janeiro, 5 c.					
22			Sulcyllic Acid —					
Cape Town, 2 cs.		£127						
Townsville, 1		21	Saltpetre —					
Townsville, 10 c		£12						
Oporto, 2 t 4		54	Gothenburg, 1					
22			Santos, 4 18					
120			Rio de Janeiro, 2 9					
61			Sheep Dip —					
Dunedin, 3 t. 3 c.		£75						
135			Lytelton, 6					
100			Fremantle, 6					
Calcutta, 2'0 pkgs. 31		540						
Cape Town, 15 8		375						
B. Ayres, 16 10		25						
M. Video, 1		25						
Soda —			Demerara, 2 t. 11 c.					
£8			Soda Ash —					
Oamaru, 1 t. 7 c.		£10						
Soda Crystals —			Sydney, 2 t. 19 c					
£7			Soda Salts —					
New York, 9 t. 4 c.		£135						
Sodium —			New York, 3 t. 1 c.					
£447			Sodium Bicarbonate					
Demerara, 15 c.		£6						
Algoa Bay, 0		5						
Delagoa Bay, 1 t.		7						
Perth, 2 10 +		16						
Sodium Oxide —			Melbourne, 14 c.					
£88			Sodium Silicate —					
Mauritius, 13 c.		£7						
Sulphur —			Algoa Bay, 25 kgs.					
£10			Madeira, 8 t. 2 c.					
85			Superphosphate —					
Canaria, 62 t. 13 c.		£130						
Tartaric Acid —			Sydney, 10 c.					
£47			Sourabaya, 2					
13			B. Ayres, 1 t.					
99								
LIVERPOOL.								
Week ending March 13th.								
Albumen —			New York, 4 t. 19 c. 2 q.					
£302			Alum —					
Galatz, 12 t. 14 c.		£56						
Ibrail, 1 8		6						
St. John, N.B., 6 19		31						
Syra, 3 2		2 q. 14						
Varna, 2 3		10						
Oporto, 10 3		46						
Melbourne, 4 19 1		23						
Singapore, 2 2 3		12						
Sydney, 1		7						
Havana, 18 cks.		24						
Montreal, 11		3						
Beyrout, 2			Yarmouth, N.S., 8 2 3					
Ammonia (Liquid) —			Tampico, 1 c. 3 q.					
£7			Ammoniacal Liquor —					
Norfolk, Va., 86 t. 7 c.		£674	Ammonium Carbonate —					
£32			Bordeaux, 19 c.					
Ammonium Chloride —			Alexandria, 1 t. 10 c.					
£55			Yokohama, 1					
23			Bremen, 6					
12			Galatz, 6 2 q.					
10			Barcelona, 2 9					
60			Ammonium Sulphate —					
Genoa, 10 t. 1 c. 2 q.		£115						
Cartagena, 10 9		120						
Las Palmas, 30 8		360						
Demerara, 49 18 1		587						
Barcelona, 30 11 1		431						
Valencia, 55 8 1		654						
Antimony —			Santander, 1 brl.					
£1			Oporto, 1					
Asbestos —			Akassa, 2 bls.					
3 bgs.			Bilbao, 3 bgs.					
New York, 40 cks		1 cs.						
St. Nazaire, 9		10						
Vera Cruz, 10								
Barytes —			Bombay, 40 kgs.					
£127			Bleaching Powder —					
Amsterdam, 6 cks.		24						
Baltimore, 24		10 cs.						
Bombay, 758		37 brls.						
Boston, 25		5 lbs.						
Halifax, 33		500						
Leghorn, 33		5						
Melbourne, 37 brls.		80 brls.						
Newport News, 5 lbs.								
New York, 500								
Shanghai, 5								
Vera Cruz, 80 brls.								
Genoa, 92								
Ghent, 74								

Cobalt Oxide—

Valencia, 1 q. £12

Copperas—St. John, N.B., 7 t. 0 c. £11
Galatz, 6 12 3 q. 6
Trebizonde, 4 8 7
Tripoli, 4 8 7
Beyrout, 3 12 5**Copper Sulphate—**Messina, 15 t. 3 c. 1 q. £221
Genoa, 53 10 723
Leghorn, 72 3 2 1,069
Bordeaux, 126 13 3 2,102
Geneva, 8 12 117
Harcloona, 30 4 1 450
Tarragona, 17 11 271
Almeria, 5 2 78
St. John, N.B., 5 10 1 12
Tampico, 25 5 2 459
Paris, 31 5 2 459
Oporto, 48 6 693
Galatz, 1 29
Alexandretta, 1 15
Lisbon, 51 7 788
Catania, 6 15 1,018
Syra, 2 9 3 5
Vigo, 2 33
Sydney, 10 10 3 157
Beyrout, 3 18 3 3
Seville, 3 18 3 30
Calcutta, 2 28
Naples, 56 12 2 835
Malaga, 2 19 3 42
Venice, 92 1 1,409**Cream of Tartar—**

Halifax, 1 t. 1 c. 2 q. £68

Disinfectants—B. Ayres, 1 t. 8 c. £56
Shanghai, 16 cks. 46
Rangoon, 10 5**Farina—**

New York, 2 cks.

Guano—

Cullera, 350 t. £7,844

Gypsum—

New York, 35 t. 8 c. £133

Iron Oxide—

Philadelphia, 7 t. 12 c. £200

Lamp Black—Corunna, 4 brls.
Galatz, 50 cks.**Lime—**Lagos, 5 t. 3 c. £5
Quitta, 20 brls.
Sapelli, 1 ck.**Magnesia—**Bilbao, 2 t. 17 c. £43
B. Ayres, 3 14
Seville, 1 10 34
Portland, 3 cs.
Santiago de Cuba, 50**Magnesium Chloride—**

Halifax, 6 t. £19

Manure—Gd. Canary, 4 t. 8 c. £51
St. Nazaire, 150 6 840
Tarragona, 10 2 1 q. 35
Marseilles, 49 18 203
Rotterdam, 19 14 64
Valencia, 126 7 1 335**Ochre—**Lagos, 20 brls.
St. John's, N.B., 30 kgs.**Oxalic Acid—**

N. Orleans, 2 t. 1 q. £65

Paint—Callao, 7 dms.
Gd. Bassa, 1 ck.
Lagos, 3 30 kgs. 10
La Plata, 18
Lisbon, 1 cs.
Manaos, 5
M. Video, 5
Opobo, 3
Sierra Leone, 72
Accra, 9
Alexandria, 60 1 brl.
Algoa Bay, 1
Amsterdam, 4 6 dms.
Bonny, 1 4
Boston, 7 7
B. Ayres, 22 120
Calcutta, 130
Cape Town, 1
Cavite, 30
Cienfuegos, 4
Colon, 9
Demerara, 2 110
Gd. Bassam, 100 20
Guaymas, 3 80Hong Kong, 40
Matanzas, 4
Mossamedes, 10
New York, 7
Nuevitos, 5
Rangoon, 6
Sagua la Grande, 3
St. John's, N.B., 75 pkgs.**Painters' Colours—**Alexandria, 100 brls.
Algoa Bay, 10 cks. 10 kgs. 2 1 cs.
Antwerp, 15 bgs.
Baltimore, 100
Belize, 9 50
Boston, 6 1
Carril, 6 6
Genoa, 6 134
Gothenburg, 41 31
Halifax, 1 1
Havana, 1 7 tcs.
Ibrail, 3 1 cs.
Mantanzas, 3 1 cs.
Mauritius, 20 601 4
New York, 22
Oporto, 22 23 1
Para, 22 23 1
Ponce, 2 2
Rangoon, 1
Rotterdam, 5
Sagua la Grande, 4
Stettin, 2
Valparaiso, 6 32 1
Bombay, 220 bxs.
Callao, 50 55
Ceara, 18
Galatz, 366
Lisbon, 20 dms.
Manila, 22 4
Pernambuco, 1
Principe, 35**Phosphate—**

Barcelona, 10 t. 8 c. 3 q. £45

Phosphorus—

Trinidad, 2 c. £20

Plumbago—

Lisbon, 2 cks.

Potashes—

Barcelona, 1

Potassium Bicarbonate—

B. Ayres, 2 t. £40

Potassium Bichromate—

Portland, Me., 5 c. 1 q. £8

Potassium Chlorate—

Pasages, 1 t. 2 c. 1 q. £44

Potassium Chloride—

Copenhagen, 5 c. £12

Salt—Genoa, 2 t. 110
E. London, 12 28
Calcutta, 10 29
Batavia, 2,000
Bermuda, 50
B. Ayres, 9
Curacao, 327
Demerara, 1,050
Genoa, 200
Gibraltar, 60
Grenada, 80
Halifax, 400
Havre, 125
Hong Kong, 386 8 kgs.
Kingston, Jam., 2
Kurrachee, 200 12
Lagos, 170
Manaos, 2
Penang, 20
Portland, 152
Rangoon, 300
Rotterdam, 25
Shanghai, 1,750
Sydney, 1,480
Valparaiso, 700**Calcium Chloride—**

M. Video, 2 t. 13 c. £6

Candles—Belize, 115 cs.
Lanzarote, 60
Malta, 280
Para, 1
Rabat, 40
Boston, 1
Gd. Bassa, 1
Kurrachee, 20
Lagos, 16
Las Palmas, 300
Madras, 990
Teneriffe, 755**Caoutchouc—**

Rangoon, 12 cs.

Carbolic Acid—

Bilbao, 11 c. 3 q. £24

Castor Oil—

Sierra Leone, 14 cs.

Caustic Potash—

San Francisco, 2 c.

Caustic Soda—

Antwerp, 35 dms.

Salt Cake—

Baltimore, 185 t. 1 c. £261

Saltpetre—

Santos, 6 t. 5 c. £138

Sheep Dip—

B. Ayres, 1 t. 18 c. 6 dms. £92

Soap—

Accra, 100 bxs. 1 cs.

Algoa Bay, 1,379 820**Barbadoes, 1,010****Belhurst, 42****Bombay, 1,310****Calcutta, 18 250 bdls.****Callao, 8****C. C. Castle, 462****Cape Town, 4,275 2****Dominica, 56****E. London, 1,760****Elmina, 100****Iquique, 1****Macassar, 500****M. Video, 1****New York, 110****Old Calabar, 1,131****Opobo, 556****Pt. Elizabeth, 2,345 10****Pt. Natal, 150****Rio de Janeiro, 1****Salt Pond, 50****San Fernando, 525****San Juan, 100****Sierra Leone, 50****Singapore, 495****Trinidad, 1,150****Warri, 350****Amboyna, 500****Amsterdam, 2,000****Bagdad, 100****Batavia, 2,000****Bermuda, 50****B. Ayres, 9****Curacao, 327****Demerara, 1,050****Genoa, 200****Gibraltar, 60****Grenada, 80****Halifax, 400****Havre, 125****Hong Kong, 386 8 kgs.****Kingston, Jam., 2****Kurrachee, 200 12****Lagos, 170****Manaos, 2****Penang, 20****Portland, 152****Rangoon, 300****Rotterdam, 25****Shanghai, 1,750****Sydney, 1,480****Valparaiso, 700**Flensburg, 370 4
Fredrickstad, 150
Geelong, 5
Malta, 5
Manoh, 100
Melbourne, 160
New York, 50
Portland, 299 18
Sherbro, 50
Sierra Leone, 402
Valparaiso, 156**Salt Cake—**

Baltimore, 185 t. 1 c. £261

Saltpetre—

Santos, 6 t. 5 c. £138

Sheep Dip—

B. Ayres, 1 t. 18 c. 6 dms. £92

Soap—

Accra, 100 bxs. 1 cs.

Algoa Bay, 1,379 820**Barbadoes, 1,010****Belhurst, 42****Bombay, 1,310****Calcutta, 18 250 bdls.****Callao, 8****C. C. Castle, 462****Cape Town, 4,275 2****Dominica, 56****E. London, 1,760****Elmina, 100****Iquique, 1****Macassar, 500****M. Video, 1****New York, 110****Old Calabar, 1,131****Opobo, 556****Pt. Elizabeth, 2,345 10****Pt. Natal, 150****Rio de Janeiro, 1****Salt Pond, 50****San Fernando, 525****San Juan, 100****Sierra Leone, 50****Singapore, 495****Trinidad, 1,150****Warri, 350****Amboyna, 500****Amsterdam, 2,000****Bagdad, 100****Batavia, 2,000****Bermuda, 50****B. Ayres, 9****Curacao, 327****Demerara, 1,050****Genoa, 200****Gibraltar, 60****Grenada, 80****Halifax, 400****Havre, 125****Hong Kong, 386 8 kgs.****Kingston, Jam., 2****Kurrachee, 200 12****Lagos, 170****Manaos, 2****Penang, 20****Portland, 152****Rangoon, 300****Rotterdam, 25****Shanghai, 1,750****Sydney, 1,480****Valparaiso, 700****Calcium Chloride—**

M. Video, 2 t. 13 c. £6

Candles—

Belize, 115 cs.

Caoutchouc—

Rangoon, 12 cs.

Carbolic Acid—

Bilbao, 11 c. 3 q. £24

Castor Oil—

Sierra Leone, 14 cs.

Caustic Potash—

San Francisco, 2 c.

Caustic Soda—

Antwerp, 35 dms.

Salt Cake—

Baltimore, 185 t. 1 c. £261

Saltpetre—

Santos, 6 t. 5 c. £138

Sheep Dip—

B. Ayres, 1 t. 18 c. 6 dms. £92

Soap—

Accra, 100 bxs. 1 cs.

Castor Oil—

Sierra Leone, 14 cs.

Caustic Potash—

San Francisco, 2 c.

Caustic Soda—

Antwerp, 35 dms.

Salt Cake—

Baltimore, 185 t. 1 c. £261

Saltpetre—

Santos, 6 t. 5 c. £138

Sheep Dip—

B. Ayres, 1 t. 18 c. 6 dms. £92

Soap—

Accra, 100 bxs. 1 cs.

Algoa Bay, 1,379 820**Barbadoes, 1,010****Belhurst, 42****Bombay, 1,310****Calcutta, 18 250 bdls.****Callao, 8****C. C. Castle, 462****Cape Town, 4,275 2****Dominica, 56****E. London, 1,760****Elmina, 100****Iquique, 1****Macassar, 500****M. Video, 1****New York, 110****Old Calabar, 1,131****Opobo, 556****Pt. Elizabeth, 2,345 10****Pt. Natal, 150****Rio de Janeiro, 1****Salt Pond, 50****San Fernando, 525**

h—			
ma,	12 cks.		
13 cs.	8 dms.		
1			
2			
4			
own,	4		
6			
al,	16	2	3
nedes,	3		
Lead—			
9 cks.			
ai,	4 kgs.		
g—			
20 brls.			
loride—			
1 t.	9 c	£23	
ide—			
19 c.	3 q.	£22	
ulphate—			
al,	16 c.	£6	
hite—			
do,	100 kgs.		

CHESTER.

Week ending March 14th.

y,	105 brls.		
ium Carbonate—			
1 kg.			
20			
ium Chloride—			
2 cks.			
ium Sulphate—			
128 bgs.			
cene—			
lam,	40 cks.		
Composition—			
Janeiro.	30 cks.		
ic Acid—			
214 brls.	11 cks.	2 cs.	
na,	16		
32			
Soda—			
139 dms.			
as—			
33 brls.			
lam,	5 cs.		
ts—			
lam,	1 ck.		
3			
14			
8 cks.			
(Solution)—			
6 cks.			
rs' Colours—			
2 cks.			
p,	373 t.		
ie—	305		
lam,	12 cks.		
50 bks			
Bicarbonate—			
35 kgs.			
67			
2 cks.			
12 tins.			
25 cks.			
2 brls.			
5 dms.			
loride—			
17 cks.			

HULL.

Week ending March 9th.

lam,	25 cks.		
ing Powder—			
198 cks.			
139			
ic Acid—			
380 cks.			
als (otherwise undescribed)			
dria,	102 cks.		
2	25 cs.		
1			
10	1		

Christiania,	17	2	5 pkgs.
Gothenburg,	5		
Hamburg,	3		
New York,	25		
Odessa,	6		
Rotterdam,	100		
Trieste,	5		
Cottonseed Oil—			
Amsterdam,	21 c.		
Antwerp,	500		
Bremen,	467		
Fiume,	100		
Hamburg,	1,307		
Rotterdam,	1,865		
Trieste,	203		

Dyestuffs (otherwise undescribed)

Boston,	29 cks.		
Dunkirk,	1		
Hamburg,	1		
Rotterdam,	1		

Linseed Oil—

Constantinople,	78 c.		
New York,	33		
Rotterdam,	52		
Christiania,	233		

Manure—

Bordeaux,	1 t.		
-----------	------	--	--

Painters' Colours—

Alexandria,	80 dms.		
Amsterdam,	1		
Antwerp,	76 cks.		
Bordeaux,	1 cs.	4	
Boston,	2	290 pks.	
Catania,	6		
Christiania,	20	1	
Dunkirk,	1		
Gothenburg,	8		
Hamburg,	90 cs.	114	
Messina,	4		
New York,	15		
Trieste,	12		
Venice,	41		
Bari,	4		

Pitch—

Antwerp,	298 t.		
Hamburg,	11 cs.		

Soap—

Christiania,	1 cs.		
Gothenburg,	1		
Hamburg,	2		

Starch—

Hamburg,	12 cs.		
----------	--------	--	--

Tallow—

Gothenburg,	5 cks		
Rotterdam,	50		

Yarnish—

Amsterdam,	10 cks.		
Antwerp,	1 cs.		
Bordeaux,	2		
Boston,	3		
Gothenburg,	1		

Whiting—

Trieste,	74 cks.		
----------	---------	--	--

GLASGOW.

Week ending March 14th.

Alkali—			
U.S.A.,	10½ c.		
Ammonium Sulphate—			
Valencia,	29 t.	19½ c.	
Hamburg,	81		
Asbestos—			
Fiume,			
Borax—			
Johannesburg,	1 t.	16½ c.	

Candles—

Algoa Bay,	6,913 lbs.		
Italy,	4,928		

Carbolic Acid—

Rotterdam,	6 t.		
------------	------	--	--

Coal Products—

Aniline Dyes			
Calcutta,			
Naphtha			
France,			
Pitch			
Brindisi,	1,032 t.	16 c.	
Cette,	682		
Spain,	647	8½	
St. Nazaire,	844		
Bombay,	134 brls.		
U.S.A.,			
Tar			
Bombay,	281 rmlts.		
U.S.A.,	25 t.	14½ c.	100 brls.
Christiania,			35
Christiansand,			2

Cod Oil—

Canterbury,	9½ c.		
-------------	-------	--	--

Dyestuffs—**Extracts**

Victoria,	3 t.	9 c.	
U.S.A.,	10	6½	

Logwood

Victoria,	11 t.	5½ c.	
-----------	-------	-------	--

Patent Indigo

Victoria,	1 t.	3½ c.	
-----------	------	-------	--

Farina—

U.S.A.,	8 t.	1½ c.	
---------	------	-------	--

Glucose—

Algoa Bay,	4 t.	13 c.	
U.S.A.,	1		

Iodine—

Rotterdam,			£265
------------	--	--	------

Linseed Oil—

E. London,	1 t.	½ c	
Malta,	3	7¾	

Manganese—

Fiume,	4 t.	18 c.	
--------	------	-------	--

Manure—

Guernsey,	25 t.		
-----------	-------	--	--

Paint—

Calcutta,			£60
Havana,			£104, 15s.

Painters' Colours—

E. London,			£23
Calcutta,			£73, 11s.

Paraffin Wax—

Auckland,	13 t.	15½ c.	
Barcelona,			£470
Fiume,	7	2	
Trieste,	12	1½	
Valencia,			73
Italy,	25	14½	
Antwerp,	1	6½	

Potassium Bichromate—

Barcelona,	5 t.		
Rouen,	4	19 c.	
U.S.A.,	8	12	
Victoria,	1	7½	
Amsterdam,			£394

Potassium Prussiate—

Lyons,	5 t.	7 c	
--------	------	-----	--

Rosin Oil—

Rotterdam,			£20
------------	--	--	-----

Salt—

Brisbane,	657 t.	3½ c.	
-----------	--------	-------	--

Slag—

Christiania,	4 t.		
--------------	------	--	--

Soap—

Antigua,	1 t.	5 c.	
Black River,	1		

Soda Ash—

U.S.A.,	25 t.		
Brisbane,	50	1¾ c.	

Sodium Bicarbonate—

Brisbane,	5 t.	8 c.	
-----------	------	------	--

Sodium Bichromate—

Rouen,	9 t.	19½ c.	
Italy,	4	19½	

Sodium Phosphate—

U.S.A.,	5 t.	12 c.	
---------	------	-------	--

Treacle—

Christiania,	17 t.	14 c.	
--------------	-------	-------	--

Yarnish—

Italy,			£30, 16s.
--------	--	--	-----------

White Lead—

Canterbury,	4 t.	1 c.	
Calcutta,	2	10	
Brisbane,	5		

TYNE.

Week ending March 9th.

Alkali—

Libau,	39 t.	18 c.	
Venice,	14	11	
Rotterdam,	5		
Copenhagen,	2	11	
Amsterdam,	42	6	

Ammonia—

Genoa,	5 c.		
--------	------	--	--

Ammonium Sulphate—

New York,	10 t.		
Genoa,	28		

Antimony—

Hamburg,	6 t.		
New York,	60		

Arsenic—

Rouen,	5 t.	5 c.	
--------	------	------	--

Barium—

New York,	8 t.	3 c.	
-----------	------	------	--

Barytes—

New York,	200 t.		
Copenhagen,	2	1 c.	

Bleaching Powder—

Hamburg,	27 t.	2 c.	
New York,	50	8	

Rouen,	10		
Libau,	105	5	
Venice,	3	4	
Rotterdam,	22	1	
Bergen,	3	4	
Trondhjem,	20	16	
Copenhagen,	20	1	
Amsterdam,	102	79	

Calcined Magnesia—

New York,	8 c.		
-----------	------	--	--

Caustic Soda—

Hamburg,	46 t.	2 c.	
New York,	39	3	
Venice,	6		
Trondhjem,	3	9	
Genoa,	64	7	
Amsterdam,	13	15	

Chloride of Lime—

New York,	99 t.	14 c.	
-----------	-------	-------	--

Dried Blood—

New York,	5 t.	9 c.	
-----------	------	------	--

Lamp Black—

Amsterdam,	2 t.	2 c.	
------------	------	------	--

Litharge—

Hamburg,	2 t.	11 c.	
New York,	12	10	
Christiania,	2	6	
Genoa,	1	13	
Amsterdam,		18	

Magnesia—

Hamburg,	1 t.	14 c.	
Amsterdam,		10	

Magnesium Carbonate—

New York,	2 t.	4 c.	
-----------	------	------	--

Paint—

Hamburg,			3 q.
New York,	5 t.		

Soap—

Copenhagen,	32 lbs.		
-------------	---------	--	--

Soda—

Soap—	
Copenhagen	20 lbs.

PRICES CURRENT.

WEDNESDAY, MARCH 20th, 1880

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

Acids :—

Acids:—		£	s.	d.
Acetic, 25% and 40%	per cwt.	6/9	& 10/-	
Glacial	"		40/-	
Arsenic S.G., 2000°	"	0	15	0
Fluoric	per lb.	0	0	3 3/4
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0	10
(Cylinder), 30° Tw.	"	0	3	0
Nitric 80° Tw.	per lb.	0	0	1 5/8
Nitrous	"	0	0	1 3/4
Oxalic	nett	0	0	3 3/4
Phosphoric, 1750°	"	0	0	11
Picric	"	0	0	10
Sulphuric (fuming 50%)	per ton	15	10	0
" (monohydrate)	"	5	10	0
" (Pyrites, 168°)	"	3	0	0
" " 150°	"	1	5	0
" (free from arsenic, 145°)	"	1	6	0
Sulphurous (solution) S.G. 1025	"	3	0	0
Tannic (pure)	per lb.	0	1	0
Tartaric	"	0	0	10 3/4
Arsenic, white powdered	nett per ton	14	12	6
Alum (loose lump)	"	4	15	0
Alumina Sulphate (pure)	"	4	12	6
Aluminoferrous	"	2	7	6
Aluminium	per lb.	0	3	0
Ammonia, Anhydrous	"	0	1	3
" 880°=28° B.	per lb.	0	0	3
" =24° B.	"	0	0	2 1/4
" Carbonate	nett	0	0	3 3/4
" Muriate	per ton	22	10	0
" (sal-ammoniac) 1st & 2nd	per cwt.	39/-	& 37/-	
" Nitrate	per ton	40	0	0
" Phosphate	per lb.	0	0	9 3/4
" Sulphate (grey) London	per ton	11	0	0
" (grey) Hull	"	10	17	6
Aniline Oil (pure)	per lb.	0	0	5 3/4
Aniline Salt	"	0	0	4 3/4
Antimony	per ton	31	15	0
" (tartar emetic)	per lb.	0	0	7 1/2
" (golden sulphide)	"	0	0	10
Barium Chloride	per ton	6	10	0
" Carbonate (native)	"	3	5	0
" Sulphate (native levigated)	"	45/-	to 75/-	
Bleaching Powder, 35%	nett	7	2	6
" Liquor, 7%	"	3	10	0
Bisulphide of Carbon	"	11	0	0
Chromium Acetate (crystal)	per lb.	0	0	6
Calcium Chloride	per ton	2	2	6
China Clay (at Runcorn) in bulk	"	15/-	to 30/-	
Coal Tar Products and Dyes:—				
Alizarine (artificial) 20%	net per lb.	0	0	8
Magenta	"	0	3	9
Anthracene, 30% A, f.o.b. London	per unit per cwt.	0	1	1
Benzol, 90% nominal	per gallon	0	1	1 1/2
50/90	"	0	1	1
Carbolic Acid (crystallised 40°)	per lb.	0	0	5 1/2
" (crude 60°)	per gallon	0	1	6 1/2
Creosote (ordinary)	"	0	0	2
" (filtered for Lucigen light)	"	0	0	2
Crude Naphtha 30% @ 120° C.	"	0	0	5
Grease Oils, 22° Tw.	per ton	2	10	0
Pitch, f.o.b. Liverpool or Garston	"	1	13	0
Solvent Naphtha, 90% at 160°	per gallon	0	1	2
Lucigen and "Wells Oils	"	0	0	2 1/2
Copper	per ton	39	6	3
" Sulphate	"	15	7	6
" Oxide (copper scales)	"	39	0	0
Glycerine (crude)	"	16	10	0
" (distilled S.G. 1250°)	"	45	0	0
Iodine	nett, per oz.	0	0	9
Iron Sulphate (coppers)	per ton	1	5	0
" Sulphide (antimony slag)	"	2	0	0
Lead (sheet) for cash	"	11	5	0
" Litharge Flake (ex ship)	"	13	5	0
" Acetate (white ")	"	24	10	0
" " brown ")	"	14	10	0
" Carbonate (white lead) pure	"	16	0	0
" Nitrate	"	18	15	0

Lime A

Lime, Acetate (brown)	per ton	5 12
" " (grey)	"	8 10
Magnesium (ribbon and wire)	per oz.	2 2
" Chloride (ex ship)	per ton	2 10
" Carbonate	per cwt.	1 17
" Hydrate	per ton	17 0
" Sulphate (Epsom Salts)	per ton	3 0
Manganese, Sulphate	"	17 15
" Borate	per cwt.	2 15
" Ore, 70 %	per ton	4 5
Methylated Spirit, 61° O.P.	per gallon	0 1 1
Naphtha (Wood), Solvent	"	0 3
" Miscible, 60° O.P.	"	0 3
Oils:—		
Cotton-seed	per ton	17 10
Linseed	"	21 0
Petroleum, American	per gallon	0 0
Stearine	per ton	15 10
Phosphorus (yellow)	per lb.	0 2
" (red)	"	0 2
Potassium (metal)	per oz.	0 3
" Bichromate	nett per lb.	0 0
" Carbonate, 90% (ex ship)	per ton	17 0
" Chlorate	per lb.	0 0
" Cyanide, 98%	"	0 1 1
" Hydrate (Caustic Potash) 80/85 %	per ton	21 0
" " (Caustic Potash) 75/80 %	"	20 0
" " (Caustic Potash) 70/75 %	"	19 10
" Nitrate (refined)	per cwt.	1 2
" Permanganate	per cwt.	2 19
" Prussiate Yellow	per lb.	0 0
" Sulphate, 90 % (ex ship)	per ton	9 15
" Muriate, 80 % (do.)	"	8 12
Silver (metal)	per oz.	0 2
" Nitrate	"	0 2
Sodium (metal)	per lb.	0 2
" Carb. (refined Soda-ash) 48 % .. nett	per ton	4 15
" " (Caustic Soda-ash) 48 %	"	4 0
" " (Carb. Soda-ash) 48%	"	4 0
" " (Alkali) 58 %	"	3 10
" " (Soda Crystals)	"	2 2
" Acetate (ex-ship)	"	14 5
" Arseniate, 45 %	"	11 0
" Chlorate	per lb.	0 0
" Borate (Borax)	net, per ton	20 0
" Bichromate	per lb.	0 0
" Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton	per ton	9 15
" " (74 % Caustic Soda)	"	8 10
" " (70 % Caustic Soda)	"	7 10
" " (60 % Caustic Soda)	"	6 10
" " (60 % Caustic Soda, cream) (f.o.b.)	"	6 7
" Bicarbonate	"	6 10
" Hyposulphite	"	5 10
" Manganate, 30%	"	16 0
" Nitrate (95 %) ex-ship Liverpool	per cwt.	0 5 1
" Nitrite, 98 %	per ton	29 0
" Phosphate	"	15 0
" Silicate (glass)	per ton	4 10
" " (liquid, 100° Tw.)	"	3 10
" Stannate, 40 %	per cwt.	3 2
" Sulphate (Salt-cake)	per ton	0 17
" " (Glauber's Salts)	"	1 5
" Sulphide	"	8 0
" Sulphite	"	5 5
Strontium Hydrate, 100%	"	8 10
Sulphocyanide Ammonium, 95 %	per lb.	0 0
" Barium, 95 %	"	0 0
" Potassium	"	0 0
Sulphur (Flowers)	per ton	7 5
" (Roll Brimstone)	"	5 5
" Brimstone: Best Quality	"	3 12
Superphosphate of Lime (26%	"	2 7
Tallow	"	23 10
Tin Crystals	per lb.	0 0
" English Ingots	per ton	63 10
Zinc (Spelter)	"	13 17
" Chloride (solution, 100° Tw.)	"	5 7

THE CHEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

410.

SATURDAY, MARCH 30, 1895.

Vol. XVI.

Contents.

	PAGE		PAGE
Topics	205	The Copper Market	212
ents in Cyanide Gold	206	Liverpool Mineral Market	212
ion	207	The Metal Market	212
f Companies	207	Liverpool Oil and Colour Market	212
elligence	208	Tyne Chemical Report	212
stary Jottings	209	West of Scotland Chemicals	212
Burmah	210	Hull Paint, Oil, and Colour Report	213
geu Cylinder Explosion	211	New Companies	213
idence	211	The Patent List	213
Ammonia Products	211	Gazette Notices	213
eous Chemical Market	211	Imports	213
Manure Material	212	Exports	216
		Prices Current	220

Notices.

Communications for the *Chemical Trade Journal* should be sent, and Cheques and Post Office Orders made payable to—

DAVIS BROS., 32, Blackfriars Street, MANCHESTER.

Our Registered Telegraphic Address is—
"Expert, Manchester."

Terms of Subscription, commencing at any date, to the *Chemical Trade Journal*,—payable in advance,—including postage all over the world, are as follows:—

Early (52 numbers) 12s. 6d.
Half-Yearly (26 numbers) 6s. 6d.
Quarterly (13 numbers) 3s. 6d.

Subscribers will oblige by making their remittances for subscriptions by Post Office Order, crossed and payable to "Davis Bros."

Communications for the Editor, if intended for insertion in the next week's issue, should reach the office not later than **Tuesday morning**.

Contributors are invited to forward items of intelligence, or cuttings from newspapers, of interest to the trades concerned.

Reports, and correspondence on all matters of interest to the chemical and allied industries, home and foreign, are solicited. Contributors should condense their matter as much as possible, on one side only of the paper, and in all cases give their names and addresses, not necessarily for publication. Sketches should be on separate sheets.

Advertisements.

Advertisements of Situations Vacant, Premises on Sale or To be Let, Persons Wanted, and Specific Articles for Sale by Private Contract are taken in the *Chemical Trade Journal* at the following rates:—

30 Words and under 2s. 6d. per insertion
Each additional 10 words 6d. "

Advertisements, Announcements in the Directory Columns, and all Advertisements not prepaid, are charged at the Tariff rates, which will be forwarded on request.

Advertisements intended for insertion in the current week's issue should reach the office by **Wednesday morning** at the latest.

CURRENT TOPICS.

SPECIAL RULES FOR ANIMAL MANURE WORKS.

WHEN referring to the case of blood poisoning by the contraction of anthrax, which occurred about three months ago at an animal manure works near St. Helens, we expressed the opinion that after what had taken place there was little doubt that this class of works would hear more of the matter before long, and it turns out that this is to be so.

The Government have all but completed an inquiry into the conditions under which wool-sorters work, and when the inquiry is ended the desirability of special rules for the regulation of this section of the manure trade will be considered.

The provisions of the new Factory and Workshops Bill do not extend at present to wool-sorters engaged at works in the manure trade or cloth factories, where men only are employed, but in view of the inquiry which is now being prosecuted, an amendment is to be introduced in the Committee stage to overcome this difficulty. The Home Secretary expects that this amendment will meet with little opposition, and so become law with the new Act, when he will have power to make any special rules deemed desirable for the protection of wool-sorters in all factories.

As is not infrequently the case, a code of precautions has been drawn up by the Bradford Corporation with respect to wool-sorting, only not being compulsory, they have been but imperfectly enforced. It appears that if their adoption became a matter of necessity under the law, there is every reason to believe that the present rules would be found sufficient to meet the exigencies of this occupation. The trade would do well to look these rules up, and do their best to get them adopted before the Government frame more vigorous regulations.

THE FOOD PRODUCTS INQUIRY.

This inquiry has been bringing out some interesting information about margarine. The causes of adulteration named are many, some blaming analysis on account of the difficulty of detecting less than 10 per cent. of margarine in butter. It is tolerably evident from some of the figures produced by witnesses that adulteration must be extensively carried on by French shippers. There is something wrong when so-called pure Brittany butter is retailed in England for less than it can be bought in the market at Rennes.

Emphasis was laid upon the inadequacy of the fines imposed for selling margarine or mixtures as butter, a point we have frequently laid stress upon in these columns. A very occasional fine of £10. is not likely to make much impression upon offenders who are clearing from £20. to £25. per week out of judicious adulteration. Attention was also drawn to the laxity with which the Act is administered in some localities.

Though much of the evidence was opposed to the sale of margarine it was on the whole trustworthy, as any measures

calculated to seriously injure the *bona-fide* trade in margarine were discountenanced. Thus, while it was suggested that by prohibiting the sale of any "mixtures" and adopting a uniform branded package, adulteration would be checked, the suggestion that it should be coloured pink, or sold in its natural colour, was not favoured, as such a regulation would doubtless greatly injure the trade owing to the capriciousness of the public taste. The proposal about "mixtures" is decidedly good, as there could be no "mistakes" then, though the notion of forbidding the sale of both mixtures and butters at the same shop must certainly be admitted to be rather too restrictive and arbitrary.

The Customs officials are a subject of complaint on account of the indifferent assistance they give in the detection of spurious butter. If not adopted as a permanent regulation, it would be very instructive, if for a period of unknown duration, the taking of samples from every article invoiced as "butter" was made obligatory on the part of the Customs officers. Judging by the evidence given at the inquiry, it would lead to some revelations. By comparison with the laws of other countries our legal provisions for the sale of margarine are by no means severe, therefore there is no excuse for offenders being so lightly treated by magistrates, many of whom appear greatly prone to pity, and so lean towards leniency, save in very flagrant cases.

THE ADMINISTRATION OF THE WEAVER TRUST.

The question of the Weaver tolls having been disposed of last year, fresh trouble has arisen in regard to the administration of the Trust. The Salt Union object to the excess revenue being devoted to the relief of county rates. Owing to the amount they contribute to the total revenue in the shape of tolls, they claim a right to have a say in the disposal of the surplus funds of the Trust, and have lodged an opposition to the Bill promoted by the Weaver Trustees. They apparently contend that the funds should be devoted to the improvement of the Navigation and kindred matters, a step which presumably would in course of time lead to lower tolls, owing to the Trust funds accumulating in spite of doing everything that could be done in the way of maintenance and facilitating management. The Birkenhead Corporation for reasons of their own are opposed to the proposals contained in the Salt Union's Bill. They contend that the Navigation is for the benefit of the county and not solely for the benefit of the traders who use it, the latter in the opinion of the Corporation evidently getting their full share of benefit out of the facilities for transport afforded them through the Navigation. Finally, the Trustees think and feel that having administered the affairs of the Navigation for so many years they are the best judges of what changes in the constitution of the Trust should be made in accordance with the directions given by Parliament for so doing. Thus what with the Trustees taking their stand upon the objections to such an unprecedented action as placing the control of the Weaver in the hands of the toll payers, and the Salt Union claiming that their proposals are in close accord with the avowed principles and recommendations of the Board of Trade, the puzzle is to know what the ultimate upshot will be. Probably the puzzle will be a lengthy one.

PERSONAL.—Messrs. John Aird and Son, London and Glasgow, have secured the contract for the Pontypridd water-works extension. The price is £56,000.

PRESIDENT OF THE BRITISH ASSOCIATION.—Sir Joseph Lister, foreign secretary of the Royal Society, will be nominated president of the British Association for the meeting which will be held at Liverpool in 1896.

IMPROVEMENTS IN CYANIDE GOLD EXTRACTION.

LAST month we referred to certain advances which had been in this direction, and promised fuller particulars. In the following we present a special abstract of a paper Mr. H. L. Sulman read before the Institute of Mining and Metallurgy. The author covers of these improvements deals in the paper with three points, namely, the solution of gold by potassium cyanide and solvent cyanogen-bromide, the precipitation of the gold from the potassium-cyanide thus formed, and also the difficult subject of slimes.

At the outset, the MacArthur and Forrest process is described the importance of oxygenation shown. The objections to oxidants such as peroxides of hydrogen and sodium, &c., are set out. It would appear that for oxygenation air is the best oxygen, but the objection to all such processes is the attendant action of the iron and other base metals in the ore, while the use of arsenic, iron, and copper, &c., in conjunction with the free cyanide formed by the decomposition of the KCN, form additional cyanide destroying compounds. This is shown by the success of the ordinary cyanide process with certain ores, and its failure with notably in the U.S.A. and Australia. Pyritic ores and compounds can be treated by the cyanide process, but the process is at times slow, despite the "selective action" of weak solutions for preference to copper containing minerals. Large quantities of base metals, however, generally prove fatal. It is to the pyritic ores that this new process is especially applicable. The better results obtained are attributed mainly to the enormously accelerated solution of the gold, wherever its particles are easily accessible, by having potassium cyanogen always ready at hand to effect the formation of the cyanide necessary for the soluble double salt of gold and potassium. Looking at the combination KCN-Au-KCN, it is apparent that an atom of K must be eliminated to admit of the formation of the gold compound KAu(CN)₂. In other words, we must have "potassium" if not actual, cyanogen at hand, and instead of effecting this "activity" of cyanogen by oxygen, the new process uses a halogen halogen does not act by hydrolysis as an oxidant.

In the treatment of pyritic ores by the ordinary oxy-cyanide process, the alkaline solution formed dissolves the sulphides of arsenic, &c. That there is a constant production of soluble sulphides, and their production is recognised, is proved by the fact of the ore of the oxy-cyanide process devising special means, which has patented, to minimise the evil. It is not improbable, therefore, the "selective action" of weak solutions may be due to nothing but a slower action of the dilute alkaline hydrates and sulphides the metallic sulphides.

In a measure the new process is a combination of the chloride and cyanide processes, as the cyanogen bromide could be made by works fitted with chlorination plant, but for many reasons preferable to manufacture the CNBr, and add it separately, the desirability of so doing is based upon the fact that the new solution in treating pyritic ores render chlorination needless in many cases. The facility of transport is also another consideration.

It should be clearly understood that the cyanogen bromide is itself a gold solvent, but requires a basis of the ordinary cyanide to yield a solvent.

PREPARATION OF THE BROMIDE.

It has been proved by electrolysis that the cyanogen is positive to bromine. The compound is a white crystalline solid, very slightly volatile. The author takes exception to the statements of former investigators as to its being very poisonous bromide, as prepared, is an anhydrous compound.

The manufacture gave at first some little difficulty. The methods, mostly requiring the use of mercuric cyanide or potassium cyanide, were of course out of the question. The chief difficulty was a tendency towards the formation of paracyanogen during the process. This has been overcome, and taking potassium cyanide and thereupon with bromine, the cyanogen haloid can be prepared in a course of a few minutes, without any mechanical difficulty, in a solution closely approaching the theoretical yield. Bromine is obtained in any quantities at 10d. per lb., and as the haloid compound contains nearly three-quarters of its weight of cyanide the bromide can be obtained at a cost substantially lower than potassium cyanide itself.

There are, however, cheaper sources of cyanogen than the potassium salt, and experiments are being made upon the utilisation of these. There seems to be no reason to doubt that finally it will be possible to produce bromide of cyanogen at a price about half that of ordinary cyanide. The apparatus required for its manufacture on a large scale is very simple, and the Gold Ore Treatment Company soon be in a position to supply quantities of the reagent as a constant article.

ication to ores is simple. The potassium bromide formed composition of the CNBr can be re-formed *in situ*. The easily be tested chemically for their contents of free KCN.

The consumption of cyanide in the presence of the compared with the consumption when used alone, has been normal. The following are some of the results which have been obtained. Pyritic examples have been taken as showing the effect of the solvent upon these troublesome ores:—

Assay of Australian Pyritic Concentrates was submitted to the new solvent and ordinary cyanide. The ores had undergone amalgamation treatment in Berdan pans, the assay of the finely-ground product showing 30z. 15dwt. of gold. The solvent (of a strength of 0.5% potassium cyanide (CNBr) in 5 hours the gold contents had been reduced to 10z. 10dwt. in 9 hours only 3dwt. remained in the exhausted tailings. The leaching of a similar bulk of ore was completed in 6 days, and the liquors were again and again renewed, the rapid consumption of the cyanide. At the end of the assay of the tailings showed that 8dwt. still continued in solution, with a much smaller expenditure of solvent, a far better result was obtained in nine hours than the oxy-cyanide process required 6 days.

Assay of pyrites tailings, containing copper and antimony: say 10dwt. 12 grains gold; on being leached for 24 hours with 0.2% KCN, CNBr yielded an extraction of 90.3%.

Australian Ore, which has given a great deal of trouble up to the present, and upon which the oxy-cyanide process has been unsuccessfully dealt with. It contained from 4 to 6 per cent. and a considerable amount of antimony. The concentrate of this ore assayed 10z. 6dwt. 20 grains of gold, and after treatment with 5% KCN and 0.25% CNBr yielded tailings of 4 grains gold per ton.

THE PRECIPITATION OF THE GOLD.

Mr. Eissler describes the MacArthur Forrest zinc-box process. He states that Mr. Eissler's statement that chemical precipitation can only be effected, his own experience proving the contrary. He replaces the zinc-box method of precipitation by an ingenious process of "zinc fume." This by-product in the preparation of zinc is a very fine powder, consisting of minute spheres of zinc oxide.

The presence of the latter renders the action of the untreated product slow as a gold precipitant, but on shaking the fume with a solution of ammonia, of ammonium chloride, or carbonate, or other suitable solvent for zinc oxide, and stirring the deposited water, a metallic emulsion is produced, which exhibits remarkable precipitating power.

A portion of this preparation agitated with a very dilute solution of N_2 (with or without the presence of free potassium cyanide) the whole volume of liquor, rendering it slightly and loudly. The minutely suspended metallic particles pervade the liquor, partly dissolve in it by replacing the gold in the $KAu(CN)_2$ solution, and almost immediately determine the precipitation of the gold. In a minute or two gold films grow around and upon the nuclei, and a precipitate begins to agglomerate. In minutes this precipitate settles down as a black powder of a fine nature, quite different in physical properties from the gold in zinc boxes. As a precipitant "fume" is very cheap, the ammonia treatment and the fume itself being 2d. to 3d. per lb. of gold, the experiments show the effectiveness of the precipitant, and its solution by the prevailing processes of precipitation is completely thrown down:—

A solution containing 2 dwt. of gold per ton in 0.2% cyanide as representing an average state of affairs when the liquors, going to precipitation in the MacArthur Forrest zinc-boxes, are added to the storage tank.

A solution containing 5 dwt. gold in 0.04% cyanide, represents the amount which would be derived from tailings treated by the alkali process.

The solution was treated with clean fume at the rate of $\frac{1}{2}$ lb. per ton of gold. The precipitate was collected after 15 minutes standing; the liquor was then treated with dilute acid to remove any excess of zinc, the residue was cupelled, and yielded buttons of (A) 98%, (B) 96% of gold assay value of the liquors. The cost of material was 1d. per ton, and the precipitation almost absolute; the loss of gold falling within limits of the assay. The precipitated gold, when taken up with liquor repeatedly, falls again completely in a few minutes, presenting a great contrast to the ordinary gold slimes, the collection and washing yield suspensions requiring hours, to settle. Further, it contains much less free zinc and no elements of that metal, and is applicable to the dilute liquors in slime treatment by decantation.

LEACHING SLIMES.

The care taken to separate slimes before treating tailings is sufficient evidence of the great difficulty which attends the treatment of these products. Their propensity for packing in a hopeless fashion when being leached in the usual way is perfectly familiar to gold-mining engineers. The author, however, has devised a coagulum in the shape of a solution of soap and milk of lime, which promises to revolutionise the treatment of slimes. The physical condition of the precipitate produced by means of this coagulation method is entirely altered, the nature of the deposit being very different from that of ordinary slimes. The amount of soap required is very small, being only from 2lb. to 5lb. per ton of suspended slimes—reckoning the latter as dry material. The effluent from the precipitation tanks is virtually pure water, if the amounts of soap and lime are proportioned rightly, and can be used again, a very important consideration in many districts—to wit, the West Australian Goldfields.

The coagulated slimes can be treated by percolation in layers from 12 to 18in. deep. The lime soap does not interfere with the action of the cyanide solution. A 0.3% cyanide solution extracted gold at the rate of 84.6% of the original gold contents, from the coagulated slimes, whereas it was impossible to obtain any result with the untreated slimes. A description is then given of various methods of coagulating and scrubbing slimes by downward and upward percolation, etc., from which the cost of slime coagulation, etc., apart from cyanide treatment, is shown to be about 3d. per ton of original ore.

This instructive and able paper concludes with an important reference to a crucial factor in the treatment of slimes. It is a matter which bears especially upon the "decantation method" and the employment of highly dilute cyanide solutions, viz., the difficulty hitherto experienced in precipitating or recovering the gold from such attenuated liquors. This serious drawback, which has formed, perhaps, the worst obstacle to treating slimes by decantation, has been overcome by the new mode of "zinc fume" precipitation already described, by which the most highly dilute gold cyanide liquors are completely precipitated.

Reports of Companies.

MESSRS. BROOKE, SIMPSON, AND SPILLER, LIMITED.

The annual general meeting of this company was held last week, at Winchester House, Old Broad-street, E.C., Mr. Arthur Brooke presiding. In moving the adoption of the report, the Chairman said that it was a matter of deep regret to the directors to present such a disastrous balance-sheet. They hoped for better things; but their hopes had not been realised. As they were aware, the state of trade had not been very satisfactory, and, in conjunction with that, the war in the East had very seriously affected their China trade. Although they had produced a greater quantity of colour than in any preceding year, the monetary value had been considerably less. If the monetary value had been the same for their aniline dyes as in 1886, they would have been able to pay a very good dividend; but, unfortunately, the prices had fallen off. In order to improve the position of the company, the directors decided to commence the manufacture of printing inks. The money required for that purpose might have been raised by making a call, but the directors considered a loan would be the better way, and that accounted for the item of the mortgage on the debit side of the balance-sheet. At the suggestion of the new directors, in June last, Messrs. Richard Simpson and William Spiller, two of the vendor directors, surrendered "B" shares to the value of £9,600., and extinguished the item representing goodwill, which had appeared as an asset in the previous balance-sheets.—Mr. Spiller seconded the motion.—Mr. Rice considered the balance-sheet most unsatisfactory. The shareholders, he said, were led to believe from the prospectus that they would receive from 14 per cent. to 16 per cent., but the company had never paid even six per cent. in its most prosperous year. It seemed to him they were going from bad to worse.—Mr. Johnson, one of the new directors, stated that the chairman had met Mr. Vaughan and himself in a very fair manner, and offered to forego £200. of his salary until the dividend was paid. Other reductions had been made in the expenditure, amounting in all to £1,560. per annum. The sole cause of the unsatisfactory state of things was that the price for aniline dyes had fallen.—The report was adopted.

THE INTERNATIONAL WATER AND SEWAGE PURIFICATION COMPANY, LIMITED.

The directors of this company have declared an interim dividend at the rate of 7 per cent. per annum on the preference shares.

Legal Intelligence.

HIGH COURT OF JUSTICE. CHANCERY DIVISION.

(Before Mr. Justice Romer.)

LEONHARDT AND CO. v. KALLE AND CO. AND J. E. RUTTER AND CO.

(Concluded from p. 278.)

The next head of objection which I ought to deal with is this, that the specification is objectionable, because "the proportions in which the various alternative oxidisable substances are to be used" are not shown. Now what has the patentee done? He has taken numerous examples and given details how, with regard to numerous oxidisable substances, they are to be used, the proportions, and everything—every information in detail. It is said that it is an objection to those examples that they are not based on any common, or definite, or fixed theory of chemists, or proportion as to oxidisable substances used. It was suggested that the patent ought to have had a theory that if you took different oxidisable substances, a certain proportion must always appear of what I may call oxidisable effect. I have no doubt if the patentee tried to do anything of the kind he would probably have failed. He was not bound to apply a theory. He was bound to give the best result. If he had formed a theory, the objection would have been taken against the theory. He has done what in my opinion is right. He has shown how to obtain the best result from the different oxidisable substances in fact, and not in theory. No objection can therefore be taken with regard to the examples given, in my opinion, because they are not based, as I have said, upon some chemical theory, or some definite fixed direction as to the amount of the deoxidisation used. But then it is said that there will be a difficulty as to the oxidisable substances which are not expressly the subject of the examples given. Now, as to this, I must say that in my opinion I think chemists would have no practical difficulty whatever. I think, seeing what numerous examples are given, that it would be easy to a chemist, as to any oxidisable substance which is not expressly mentioned, to ascertain in which one of the examples, or which of one or two of the examples the oxidisable substance he is dealing falls, and apply that example. I think there would be no practical difficulty in it, and I certainly do not think that it is a legitimate objection to this specification that the patentee does not go through every oxidisable substance and make a separate example of that. For that is what the defendants' objection would come to if legitimately carried out. Therefore I think that objection fails.

The next objection of the class I am considering is that the patentee has not shown "how the process can be varied so as to produce the several shades of colour mentioned." In my opinion that was not necessary. It is very difficult to define colour. Shades of colour vary infinitely, and it would be impossible practically for a patentee to frame a specification of an invention like this, where practically any suitable oxidisable substance can be used, if he was bound to take every oxidisable substance and define what shade of colour each one would produce when especially you vary the detail of the process. The patentee has pointed out what colours his dyes produce. Undoubtedly all the colours that are produced from his process are accurately stated by the limits given in the patent. Practically there would be no difficulty. A person wanting to use these dyes would test the examples given. He would see what colours are produced by the different examples, and whichever colour he preferred he would then in working out the patent work the example that produced that colour. There would be no real difficulty. Still less was the patentee bound to give a sort of chemical definition of each dye with reference to its colour-producing qualities. I think that objection also fails.

The last objection is that the specification is bad, because it "entirely fails to state the chemical nature of the compound or compounds produced by the processes." That is, in my opinion, another example of an unfair objection. In my opinion the patentee was not bound to state anything of the kind. In fact, having regard to the present chemical knowledge, it would be impossible for him to do so with any certainty. Chemists themselves, and the most experienced of them, differ merely as to what the chemical nature of the compounds produced by the process really is. Objection 1 fails.

I now pass to objection 2. The objection is "That the claiming clause of the complete specification is too general." In my opinion it is not. The first sub-head of objection 2 is that the specification is too general because it "states that other oxidisable substances can be used in lieu of those specially mentioned;" and then a special reference is made to zinc dust. As to that objection I have already dealt with it in detail when I was considering the first objection, and I need not repeat what I have previously said. So as to sub-objection B of objection 2, which is an objection that the processes mentioned in the specification do not enable the reader to exactly ascertain what colours

are produced by each example. With that objection I have already previously dealt when I was considering the first objection, and I need not repeat it. Objection 2, therefore, in my opinion, fails; as a result I hold that the specification is sufficient, and that it enables the object of the invention, to be obtained as pointed out by the patentee.

I now pass to the last point involved in this case: the question of infringement. In my opinion the defendants' dyes R. and K. infringe the plaintiffs' patent. Now the defendants' process is this: He has a first product, and he deals with that first product with sulphate. What is his first product? In my opinion this is the same as with Walter's yellow, and with the first product of the 1886 patent those yellows were obtained according to the knowledge existing in 1888. It is said on behalf of the defendants that the first product is different from those three other yellows that I have mentioned, but it is produced from the same substances under a different temperature and that the temperature is essential. A temperature of 70 degrees is mentioned in the defendants' specification. I notice in his specification he does not keep himself to a special temperature of 70. He shows any temperature below 100 degrees Centigrade can be used, and in my opinion, there is no distinction between the two on this ground of temperature. I think that the defendants' first product is a well-known yellow—the well-known yellow substance of the first product according to the 1886 patent and nothing else. It was made of a suggestion on behalf of the defendants as to what the precise chemical nature of this first product was. The defendants have laboured much to establish that it had a distinct chemical character that it was dinitrosostilbenedisulphonic acid. With regard to this I can only say this: The chemists differ very much about it; it is possible it may be, and it is possible it may not be, but whatever the chemical nature of that first product of the defendants is, I hold that it is the ordinary yellow of Walter, and the yellow—the first body—of the 1886 patent, and I need not decide where chemists cannot agree, what the precise chemical composition of those yellows is.

Having obtained his first product, which was old, with that yellow, what does the defendant do with it? Not, according to the patent that would not work, but in practice he treats it with an oxidisable substance, with ferro sulphate, a substance that is, in my opinion, suitable for the purpose, and one that is not so different from the other oxidisable substances specially mentioned in the 1888 patent, that it can be fairly said to be excluded from the 1888 patent. It has, in fact, in my opinion, in substance adopted the plaintiffs' process, and moreover he has obtained the plaintiffs' result. His dye, in my opinion, is the plaintiffs' dye. The product of the 1888 patent has the same qualities, and, in my opinion, has the peculiar fastness which is one of the characteristics of the plaintiffs' colours. The defendants' process, steps are used, and it is said that to obtain rich colours, R. 1 and R. 2, of the defendants', instead of the plaintiffs' process, the steps being these: First, the condensation process is used so as to get the yellow product, as I have mentioned—the first product; and then you reduce the deoxidising substance. In the plaintiffs' examples in his specification (they are given in the specification for no doubt in most, at any rate, of the examples) there is but one step—that is to say, the condensation process; the reduction are done at once, as, in fact, they can be done by the substances mentioned in the example. But in the defendants' patent, I notice on page 3 that when he deals with the examples he is about to give he describes those examples, and he in general pursues, and he says: "In order to render the process better understood, I give the following examples, and, however, I do not limit myself, as they can be variously modified, departing from the nature of the invention." I think that the defendant was right there, and I think he was within his rights in calling attention to the fact that he could modify the process given in his example so long as you did not depart from the nature of the invention. What the defendant has done is this: He has not departed from the nature of the plaintiffs' invention, but he has modified it, and he has modified it in a way that chemists to whom the plaintiffs' specification is addressed would know that if you were using a substance like ferro sulphate if you wish to utilise it to the best effect, and to cause it to properly and produce a rich colour, you must let the condensation take place before the complete reduction, or, in other words, use some ferro sulphate after the caustic soda had been applied, as chemists would know that it was a modification of the examples in the plaintiffs' patent, which ought in that case to be adopted, and departing from the nature of the invention.

I am satisfied, on the whole, that there is no real difference between the two processes, on the grounds which I have mentioned. I am satisfied that the defendants' process is following the words of the plaintiffs' patent.

process of producing colouring matters fast to alkali which turn yellow, orange to brown without mordant, by the action of oxidable substances and free alkalis upon para-nitro-toluol under heat substantially as described," in the plaintiffs' favour, and for those reasons I hold that there has been an invention.

Lord: That will be judgment for the plaintiffs, with the costs, and a certificate that we have proved our patent. It is a difficult case, and I submit to your Lordship there are costs on the higher scale.

Mr. Romer: No. I will not do that; I cannot do it.

Lord: I think your Lordship gave it in the *Farbenfabriken* case.

Mr. Romer: I have never done it except by consent. I do not know how a judge can do it, except by consent. I will do it about it.

Lord: Of course, there will be a certificate of validity?

Mr. Romer: Oh, yes; you get the certificate of the validity of the patent.

Lord: We will have an account of profits instead of damages.

Mr. Romer: Yes.

Lord: And, of course, delivery up of the infringing dye?

Mr. Romer: You will not want that, will you, delivery of the dye?

Lord: I believe there are very large quantities. Well, my Lord, I do not say anything about that. Of course, anything that is must either be destroyed or sent out.

Mr. Romer: You have got the injunction, and you are the dyes that are referred to (we must be careful) will be destroyed.

Lord: Yes, my Lord. Will your Lordship include the costs in the costs?

Mr. Romer: I think that goes by consent. I cannot do otherwise than as to that.

Lord: That has been arranged about.

Mr. Romer: That has been dealt with by arrangement.

Parliamentary Jottings.

PREVENTING POTATO DISEASE.

In the House of Commons, last week, in answer to Mr. W. J. Morley said: Field experiments for testing the value of copper sulphate and lime to the potato plant, as a preventive of potato disease, were carried out by the Agricultural Commission in the years 1891, 1892, 1893. The results obtained from the experiments conducted in 1893 proved conclusively that a proper application of the mixture of great value as a preventive of potato disease; it was, therefore, considered necessary to continue the field experiments. Field demonstrations were given in a small district of the county of Antrim in that year, the same mixture being used.

Messrs. Strawsons, Limited, supply a concentrated mixture of copper sulphate and lime for application to the potato plant by the ordinary way, but this special mixture was used in the experiments or demonstrations carried out by the Agricultural Commission.

THE ALUMINIUM COMPANY AND THE FALLS OF FOYERS.

Mr. Morton asked the Secretary for Scotland whether the Aluminium Company and the Falls of Foyers had yet come to any decision as to the proposed interference with the Falls of Foyers.

Mr. Trevelyan: I am informed by the County Clerk of Inverness that the Falls of Foyers Roads Board, at a meeting on the 8th of this month, postponed the consideration of the proposal to submerge certain parts of the falls, meantime calling on the Aluminium Company to submit to the Board the plans and sections of the proposed scheme to enable them to judge whether the district would be affected thereby.

Mr. Morton: Will my right hon. friend say whether they have any plan of the works as well as of the roads?

Mr. Trevelyan: The words are "plans and sections of the proposed scheme."

Mr. Gregor: Is it a fact that the chairman of the Committee and the landowner is also factor to the landlord? I should like to ask the gentleman whether he does not think that this is a fair case?

Mr. Trevelyan: I believe that gentlemen interested are on the one side in this and other cases, but it will be impossible for me to say any functions from the Roads Board on that account.

Mr. Gregor: Assuming that the County Council of London

sought to divert the River Thames into another channel—the remainder of the sentence was lost amid roars of laughter).

Mr. A. C. Morton asked whether these gentlemen would have a right to vote on the County Roads Board.

Sir G. Trevelyan: That is a fair matter for inquiry. My own impression is that they could not be deprived of that right except if they were engaged in some contract in relation to the business of the Roads Board itself.

TESTING WESTPHALITE.

Replying on Monday to Mr. J. Wilson (Durham), Mr. Asquith said: I have not decided to cause the apparatus erected at Messrs. Pearson and Knowle's collieries near Wigan for testing other safety explosives in mines to be utilised for testing westphalite; but if there should be need of it I shall be very willing to accept the loan of suitable apparatus from any quarter. I am aware of the apparatus belonging to the North of England Mining Institute; in fact some of the inspectors of coal mines have been assisting at these experiments. Until the passing of a Bill dealing with the use of explosives in dangerous mines it will be premature to institute experiments on different sorts of explosives, but I am fully alive to the necessity of impartiality being secured in any experiments that may be made. And, I may add, I hope very shortly to introduce a Bill.

GOVERNMENT REGULATIONS FOR WOOL-SORTING.

On Tuesday, in reply to Mr. Woods, mention was made by Mr. Asquith of the fact that an inquiry has been for some time in progress by the Factory Department into certain industries which involve the risk of injury to the persons employed, among these being wool-sorting—where there is a possibility that anthrax may be contracted,—and this inquiry is nearly completed. On its completion the question whether special rules are desirable for the occupation of wool-sorting will be considered, and, he said, I believe with the amendment I have indicated, becoming law it will be possible to make any such rules applicable to the industry so far as it is carried on in workshops where men only are employed which otherwise would be exempt.

Mr. Byles asked the right hon. gentleman whether he had seen the precautionary regulations drawn up by the Town Council of Bradford with respect to wool-sorters, and whether those precautions which hitherto had been imperfectly enforced would not be adequate if enforced under this Bill?

Mr. Asquith had seen the regulations to which his hon. friend referred, and he believed that where they had been enforced they had been adequate. He would consider whether they could be adopted in the Bill.

FIRE AT A CHEMICAL WORKS.—The chemical works of Felton, Grimwade and Co., situated at Port Melbourne, have been destroyed by fire. The damage is estimated at £13,000., and the insurances amount to £9,000. The fumes arising from a burning mass of 600 tons of sulphur were overpowering.

PERSONAL.—Those interested in oils, fats, soap, etc., will be pleased to know that the services of Dr. J. Lewkowitsch are now available to the public, as he has relinquished his connection with the Whitehall Soap Works, Leeds, and has commenced practice in Manchester as a consulting and analytical chemist, with the fat and oil industries as his specialities.

ANOTHER NEW ELEMENT: HELIUM.—At the annual meeting of the Chemical Society, on Wednesday, after the presentation of the Faraday medal to Lord Rayleigh, Professor W. Ramsay stated that in his endeavours to discover whether argon combined with any other element he made some experiments under conditions which were stated to yield nitrogen gas. As he had anticipated, argon was given off and not nitrogen, but mixed with it he found what appeared to be another gas. This gas is no other than the hypothetical helium, whose existence has only been inferred up to the present from a line D 3 in the solar spectrum. There is, it is said, no doubt about the discovery, which was confirmed by Professor Crookes, who gave the wave length of the line (587.47). The discovery was only made a few days ago.

SHIP CANAL v. SALFORD CORPORATION.—The action brought by the Manchester Ship Canal Company to enforce the payment of tolls, etc., by the Salford Corporation in connection with the new sewage sludge steamer was concluded in the Chancery Court of Lancashire on Wednesday. In his judgment the Vice-Chancellor granted the Corporation exemption from all tolls or dues. On other points in the action his Honour gave judgment to the effect that the Corporation had a right conferred upon them by clauses in the same Act to carry a hose-pipe across the company's wharf for the purpose of loading their steamer with the refuse matter. He, however, granted the Canal Company a declaration that the Corporation in using a steamer 170 feet in length were exceeding the free wharfage powers conferred upon them by the Act, which limited them to a length of 100 feet.

CUTCH IN BURMAH.

BY OUR BURMESE CORRESPONDENT.

(Concluded from p. 161).

THE PRODUCTION OF CUTCH IN THE FUTURE.

inquiries which I have made at the Revenue and Forest Department in Burma, I learn that the new regulations for its manufacture about two years ago, are working for good in many ways. The principal importance was to render the Burmese more independent of the Chinese distributor, who had by the State Forest regulations controlled all the manufacturing by the power of his purse. Now they are limited in number as far as possible, to the actual manufacturer. In Lower Burma, which extends up to Prome, and which was formerly the centre of supply, the manufacture has almost ceased; no licences issued because of the indiscriminate wholesale destruction of the trees in the past; and in Upper Burma, extending from Prome to Bhamo and the Chinese frontier, the number of licences considerably reduced, and the length of time for which they are valid has been reduced this season to four months, instead of six as formerly. The intention is to spare the trees by reducing the number of cutters, and sure enough this will come about if the regulations are generally enforced. But it is not an easy matter to have the law in outlandish districts, which the forest rangers can only visit at intervals. By a new system of permits or certificates, which each up-country man must obtain before he can despatch his cutch to Rangoon, the Government have now a further control, and in the course of time they will be able to spot, as already done with less definite data, the districts which are overworked. These passes are a source of trouble and some of the Chinamen, and he looks upon them as detective records of his practices to diddle the Government and make an unfit by excessive production of inferior quality.

The cutch industry in Burma yields a revenue of about a lak of annam (£10,000), and the total quantity produced approaches 100 tons, the export value being nearly £300,000. In the report for Upper Burma it is stated that the cutch trees have not been entirely worked out in some parts, and that in others they are still plentiful. The experience of Lower Burma has shown that the cutch tree will be exterminated, unless its manufacture be severely restricted.

Cutch tree areas must be carefully reserved, but perfect reservation is not an easy matter. Where there is a large population, the cutch must be allowed to follow their natural employment within certain limits. But unworked forests can and will now be reserved, and reservation cannot be applied, regulations have been issued to tend to keep the industry alive and healthy. The object is to be kept in view is to prevent the felling of undersized trees. The felling of undersized trees has always been forbidden by law, but difficulty has been experienced in enforcing the law, and licence can rarely be obtained to bring home cases of unfair particular individuals. In order to meet this difficulty it has been decided to insist on the joint responsibility of cutch-boilers for the undersized trees. Cutch-boiling is carried on in small camps, where the cutch-boilers, who fell trees in the immediate vicinity and drag them to camp. It has now been made a condition of all licences that the undersized tree is found in a cutch camp, all the licences at camp shall be liable to be cancelled under the orders of the Forest Officer. It has further been directed that in future licences shall be issued by Divisional Forest Officers only, and that the holders of licences shall not be given to single speculators. The licences will be issued to actual workers only. It is hoped that the effect of the measures stated above will be to prevent the felling of undersized trees in Upper Burma.

On the other day an opportunity of consulting two of the largest merchants in Burma, whose business is chiefly in cutch. One said that this season will be 25% less, and the other, in answer to a question, shrugged his shoulders, and said, "Who can tell?" This gentleman, of silent mien and modest opinion, seemed to think that a Burmah cutch workman would require to do as much work in this season as he formerly did in six months, and probably he had reasons for saying so, for it is the Chinaman's money that makes the cutch pots boil. But the intention of the Government is to reduce the cutch, first by stopping it in Lower Burma, second by reducing the area of unreserved forests, and reducing the number of licences in Upper Burma. Thirdly, allowing only four months for felling and boiling, instead of six as formerly; fourthly, by abolishing the cutch from Than-tree liquor, and, finally, by reducing the cost of each licence per cauldron, or boiling down pan, from 60 rupees each for the season of four months, and in the past, when sold by auction, they have fetched as much as 275 rupees each where the number had been much reduced, and consequently competition for them was keen. Under these conditions, the Chinaman will still be the controlling power, although

every care is taken to provide against his becoming the proprietor of these auctioned licences, for his influence is contrary to the interests of the Burman producer or the European consumer. In consequence of these new forest rules the cutch has already advanced, and the price at home will have to rise to this advance, unless a further fall in exchange relieves the price, or unless the European and United States stocks are large enough to govern the home market irrespective of the present season. The general opinion of the European exporters of cutch in India, where the whole trade is now centred, seems to be in favour of improvement in the quality, and in the near future, if not in the present, a reduction in the quantity, as a natural consequence of the representations to the Government and the new regulations of the Forest Department.

THE USES OF CUTCH are numerous, but chiefly for dyeing and tanning. Catechu has long been employed in India for tanning skins, and the principal consumption of catechu is in the tanning of hides, stances exposed to water—fishing lines and nets, sails and canvas used for coverings—and in the United States the miners and wear what are in India called kharki (dirt-coloured) clothes of catechu.

For dyeing, catechu has been in use in India from a very early period. A solution of catechu is, by the action of lime or alkali, into a dull red colour, which constitutes a fairly good dye, and for that purpose in some parts of India. The extract may be made by the heart-wood broken up and boiled with lime. With salts of iron and sal-ammoniac catechu gives a permanent bronze-brown, much used by the calico-printers of India. The colour is deepened by the use of perchloride of tin, with the addition of nitrate of copper. Dinajpur (Bengal) the red expectation from chewing pan is prepared and used as an auxiliary in dyeing eri (*Attacus ricini*) silk. Dr. M. in his "Dyes and Tans of Bengal," mentions a dye combination. Mr. (now Sir) E. C. Buck, in his "Dyes of the North Provinces," adds several others in most of which lime constitutes a basic agent. The rationale of these dyes lies in the fact that the influence of oxidizing agents (chiefly metallic salts) on the catechu compounds are converted into insoluble and thus permanent dyes. By the calico-printers of Upper India 2 lb. of catechu is dissolved in three gallons of water. To this solution is added 1 lb. of alkali and the mixture set aside for 12 hours. The surface coloured is skimmed off and preserved as the printing "standard." In the oxidation has taken place, or nearly so, before the dye is printed on the fabric. In Europe this is never done; the dye containing soluble catechu and gum, is printed on the fabric, and oxidation accomplished within the tissue. This is a most effectual and permanent process.

FORMS OF THE CATECHU EXTRACT.

There are three substances, all very similar in chemical composition, derived from *Acacia catechu*, viz., dark catechu or cutch; pale catechu or kath; and keersal.

1. Dark catechu or cutch, which is used for industrial purposes, made into great masses surrounded by leaves, balls, cakes, or shaped pieces, or broken into small blocks. In colour it is of a rusty brown, internally of a dirty orange to a dark liver or some cases almost black, in others port-wine coloured. It has with an astringent bitter taste, followed by a sense of sweetness, brittle, and breaks with a more or less resinous and shining fracture.

2. Pale catechu or kath is a grey-coloured crystalline substance, under the microscope, is seen to be made up of angular masses of needle-shaped crystals. As sold in the bazaars it is either in irregular pieces or in square blocks similar to the dark brown cubes of catechu. This is the substance eaten by the natives, which imparts with lime the red colour to the lips. Continued use blackens the teeth.

3. Keersal is a pale crystalline substance obtained from the wood of *Acacia catechu*, where it "occurs in small irregular fragments like little bits of very pale catechu mixed with chips of wood." (Dymock.) It is much valued in medicine by the Hindoos, fetches a high price.

In the Calcutta market, three sorts of catechu are known, Janakpuri, Telà, and Burma or Pegu. Of each of these there are different qualities, which vary in price.

Janakpuri (pale catechu) is brought to Calcutta from a small quantity also comes from Cawnpore, but the product of the North-Western Provinces is almost entirely used for internal consumption and for export to the Panjab, Berar, and Bombay. The Janakpuri varies from R. 12 to R. 20 per cwt. It is and gambier considered best for chewing with pan.

Telà (dark catechu) is also brought to Calcutta from Patna, either sold in the crude state or refined. Of telà there are two qualities. In the refining process the catechu is first dissolved in water, the solution evaporated by boiling, and the residue cast

und or belguti (from *Bell*, the fruit of *Egle Marmelos*, which es), and square, called Chaunka or Kālagarān. The price of from R.7 to R.10 per cwt.
n, Jan., 1895.

OXYGEN CYLINDER EXPLOSION INQUIRY.

MR. Arthur Langham, deputy-coroner, an inquiry was held last week at the City Mortuary, Golden-lane, Barbican, the death of William Holbrook, who was killed by an explosion at Fenchurch-street Station, E.C., on Friday, the 15th inst.—At the Coroner observed that he had been in communication with the Home Office, as there was some doubt existing as to whether an explosion under the Act, but he had been informed by the Act that the Act did not apply. They had, however, conceded for an expert witness, but an adjournment would be necessary that he might attend.—Sarah Maria Holbrook, of Plaistow, identified the deceased as her father. He was of age, and was in the employ of Dr. Kennedy as gardener.—Thomas Kennedy, residing at Chesterton House, Plaistow, stated the deceased was gardener to his father, and had been in his service some years. He sent him to London on Thursday with a gas cylinder. On Friday he went again. On both occasions he was with Messrs. Newton and Co.'s, of Fleet-street. He had been trying the cylinders for the last three years. He knew the gas, and witness had warned him to be careful not to use the cylinder, which was used for the purposes of a magic-lantern. Witness had been in the habit of using them for the last two years, and was well acquainted with the nature of the gas. Asked what gas was used, witness replied oxygen, or a chlorate of potash. He had never had the slightest mishap with it. He knew that the gas was dangerous. Deceased was really a very careful man. On one occasion witness sent a boy to fetch a cylinder from Messrs. Woods, but he was that he was cautioned by the railway company. No one had the cylinder except himself. He was prepared to swear that the cylinder was not on it when it left his hands.—Wm. Carrier, of Alberts-road, High-street, Plaistow, stated that on Friday he was at Fenchurch-street Station at 25 minutes past three, was walking along the down platform he saw the deceased, sitting on one of the seats. He did not know who it was, although he had known the deceased for thirty years. When he got within a few paces of him he saw a flash of light resembling lightning, struck by the force of the explosion, and staggered backwards into a seat. He sat there for a moment or two, and then he saw the spot where he had seen the light. He saw a hand lying on the corner, and there was a little heap of broken iron and debris. There were pieces of flesh strewn all over the platform, and the body of a man was lying some distance away amongst some rows.—William Henry Truscott, a newsagent, of Belgrave-pney, said that on the afternoon in question he was standing at the bookstall at Fenchurch-street Station. The stall was some distance away from the scene of the explosion. When he heard the explosion he was lifted off his feet and saw a flash like lightning, and the next he remembered was finding himself half-way on the platform. He did not see the deceased come on to the platform. When he had recovered himself he walked up to the second seat and noticed a lot of blood near the second seat.—John Grett, a foreman porter at Fenchurch-street Station, Great Eastern Railway, stated that he was on No. 4 platform, about 30 yards from the explosion took place. He was walking in the rear of the seat when he heard a loud explosion, and on going on to the bookstall, who had his handkerchief up to his face, he saw the victim lying on the platform under the dead. He did not notice any light, but found the cylinder lying on the platform at right angles from the corner of the seat. He saw the body of the deceased lying on the platform at Fenchurch-street Station after the departure of the train from Fenchurch-street to Southend. Witness noticed that there were parcels with him, one of which appeared to be covered with a cloth. He went to the second seat from the bookstall, and saw him lighting his pipe as he moved from No. 4 platform. After, stationmaster at Fenchurch-street, put in the regulations relating to the carriage of explosives, and the Coroner read the regulations relating to gas cylinders. He continued that nobody was allowed to carry a cylinder without previous notification to the railway company, and in no case would they allow a naked one to go by rail. He had come across naked cylinders being carried as ordinary parcels, and the person in charge of them was always informed that they were not to be allowed to go by rail unless packed and protected to the regulations. By the jury: Dr. Kennedy had never seen that he was going to send a cylinder, and gave no intima-

tion in this case. Inspector M'Lachlan, Fenchurch-street, deposed that about a week before the explosion a lad came to his office and said that he had lost his return ticket and wanted to go to Plaistow. He had a gas cylinder in his hand similar to that produced, and said it was charged. He further stated that Dr. Kennedy had sent it, and that it had been filled in Fleet-street. Asked what would happen if he dropped it, the boy said, "It would blow me to pieces." He was informed that he could not take it by train, and was afterwards seen off the premises. Witness identified a boy in court, named Fincham, as the one who came to him on the Thursday or Friday referred to. James Christopher Fincham, a boy of 17, in the employ of Dr. Kennedy, stated that he had been up to London to fetch a gas cylinder about half-a-dozen times, the last time being about three weeks ago. He had never lost his ticket and had never been stopped. The Coroner: You have heard the evidence of the inspector. Do you mean to say that all that he has told us is utterly untrue? Witness.—Yes, sir, utterly untrue. Mr. H. G. Drury, assistant-superintendent of the Great Eastern Railway Company, gave evidence relating to the carriage of gas cylinders, and the inquiry was afterwards adjourned.

Correspondence.

* * We do not hold ourselves responsible for the opinions expressed by our correspondents.

FORMALIN.

(To the Editor of the Chemical Trade Journal.)

SIR,—I should esteem it a favour if, through the medium of your Journal, any of your readers could give me some information about the manufacture of a new disinfectant which has been recently introduced, called "Formalin." Any information would be acceptable.—Yours, etc.,

METHYL.

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzol is fairly steady, with a slight advance in price for forward. On spot quotations for 90's and 50/90's are the same as last week, but several thousand gallons of 90's have been done for delivery over the last half of this year at 1s. 2d. Carbolic acid is flat, with nothing doing in crude, though crystals are in rather better inquiry, with a disposition to stronger prices. Crude naphtha is unchanged, while solvent keeps quiet at 1s. 2d. Anthracene is slightly easier for 30% B at 9½d. A is unaltered. Pitch steady at 33s. 6d. to 34s., f.o.b. East Coast.

Sulphate of ammonia is flat, and the market has been very irregular during the week. Compulsory sales have in several instances been reported at very low figures. The nearest actual representative value to-day, however, may be taken as £10. 15s. at all ports, with a quiet market.

MISCELLANEOUS CHEMICAL MARKET.

In the alkali trade there is a fair amount of business being done, but values all round show no sign of improvement. Bleaching powder is a shade weaker for export at £7. 3s. 9d. to £7. 5s. per ton, f.o.b., and £6. 17s. 6d. to £7. per ton, f.o.r. makers' works. Caustic soda is meantime without further alteration, spot prices being as follows:—f.o.b. Liverpool, 77%, £9. 15s.; 74%, £8. 10s.; 70%, £7. 10s.; 60%, £6. 10s.; 10-ton lots and upwards. Alkali, 58%, still depressed at £3., in bags, makers' works. Soda crystals 37s. 6d. per ton, bags, f.o.r. Chlorate of potash, 4½d. to 4¾d. per lb.; chlorate of soda, 6¾d. to 6½d. per lb., and there is a feeling that prices have touched the bottom. Sulphur in all grades is still offering at low rates: lump, f.o.r. makers' works, £3. 12s. 6d. per ton. Lump alum, f.o.b., £4. 12s. 6d. to £4. 15s., in casks. Sulphate of copper is a fairly brisk market at £15. to £15. 5s., f.o.b. Potash, caustic and carbonate, continues in good request, and prices are well maintained: carbonate, 90/95%, at £16. 15s., c.i.f.; caustic, 75/80%, at £20. per ton. In acetates of lime there is nothing doing, and no change in values to report—all other acetates being equally slow. In acetic acid there have been some recent reductions. White powdered arsenic is still a scarce commodity, and price firm at £14. 15s. nett, Garston. Yellow prussiate of potash weaker at 9d. per lb. Cyanides and sulphocyanides are also weaker. The general trade in chemicals meantime shows no sign of improvement.

REPORT ON MANURE MATERIAL.

There is more activity in the market for prompt and early delivery, but in the main prices do not indicate much improvement. There is very little doing in the forward position. Mineral phosphates are unchanged. The quotations are for 75/80% Florida Rock 7½d. per unit, for Peace River Rock 6½d., for South Carolina 6¼d., and for 55/60% Algerian 6¼d., in cargoes c. f. & i. to good United Kingdom ports, 1895 steamer shipment, but these prices are about ¼d. per unit above buyers' ideas. There is nothing fresh to report in River Plate bones, and value of cargoes afloat cannot be quoted at much above £4. per ton. Crushed Kurrachee bones for autumn shipment offer at £4. 7s. 6d. per ton, without finding buyers. Bombay bone meal is scarce on spot, and £4. 10s. to £4. 12s. 6d. per ton is again asked. For parcels afloat £4. 7s. 6d. is about the value. Common grinding bones are dearer, and £4. up to £4. 3s. 9d. per ton paid, ex quay Liverpool, for West Coast. Nitrate of soda is moving off at 8s. 7½d. to 8s. 9d. per cwt. on spot. Due cargoes are worth barely 8s. 6d. per cwt., but anything of handy size and good quality arriving at port of call might fetch rather more.

THE COPPER MARKET.

Messrs. Harrington and Co., in their fortnightly report, dated Liverpool, March 20th, 1895, state:—

Chili Charters for the past fortnight are cabled as 700 tons, making the total since 31st December last 3,900 tons, against 4,000 tons same time last year. Exchange, 16½d. Since our last the market for G.O.B.'s and G.M.B.'s has been irregular, and prices have fluctuated between £39. 3s. 9d. cash, and £39. 11s. 3d. three months, and £38. 12s. 6d. and £39. respectively, closing to-day with buyers at £39. 6s. 3d. cash and £39. 13s. 9d. three months. The total stocks in Liverpool, Swansea, London, and Havre are 49,778 tons, against 51,440 tons on the 1st inst., showing a decrease of 1,662 tons for the fortnight. The stocks include about 1,600 tons of copper sold, but not yet delivered to smelters. The visible supply for the fortnight is 53,950 tons, against 55,228 tons on the 1st inst., showing a decrease of 1,278 tons. Refined and manufactured sorts are steady. Quotations being:—Toughcake, £41. 10s. to £42.; best select, £42. 5s. to £42. 15s.; Indian sheets, £46. 5s. to £46. 10s.; strong sheets, £48. 10s. to £49., and yellow metal sheets, 4d. per lb. The sales of furnace material are confined to 200 tons San Miguel precipitate, to arrive here, sold on private terms.

LIVERPOOL MINERAL MARKET.

The firm tone of our market reported last week has been well maintained. Manganese ore: Arrivals have been *nil*, whilst stocks are very much reduced; prices are unaltered. Ground manganese is in very fair demand at £6., £8., £10., and £12. 10s., according to quality. Manganiferous iron ore is steady at 15s. to 16s. per ton, c.i.f., for Grecian, and 16s. to 17s. 6d. per ton for Spanish, in cargoes. Bauxite, Irish Hill brand, maintains the increasing demand, and prices are firm at 20s. for first quality, 16s. for second quality, and 12s. for third quality, f.o.b. Chrome ore. There are still a few small arrivals, but they have gone direct into consumption, and very large sales have been made at full figures. French chalk: Arrivals are small, whilst sales are increasing at good prices: "Angel White" and "Gold Medal" brands at 70s., 80s., 90s., and 110s. per ton, according to quality. Tungsten metal is steady at 1s. 9d. to 2s. 3d. per lb. Ferrotungsten at 1s. 11d. per lb. Plumbago is in increasing demand, especially for foundries and lubricating purposes. Arsenic continues very scarce at high figures. Ochres are steady, with a fair demand: prime Cumberland 55s. to 60s. per ton; Spanish, 60s. to 70s.; French J.C., 60s. per ton; other brands according to quality. Bog ore (hydrated oxide of iron) is steady at 22s. 6d. per ton. Fluorspar: lump and ground, 40s., 80s., and 120s., according to quality. Feldspar steady at 35s. to 40s. Cryolite £40. per ton.

THE METAL MARKET.

LONDON, WEDNESDAY.—Pig iron, easy: Scotch warrants closed at 41s. 8d., Middlesbrough 34s. 4d. cash, and hematite 42s. 5½d. Copper, easier: Chili bars, G. O. B.'s and G. M. B.'s, closed at £39. 2s. 6d. to £39. 7s. 6d. cash, and £39. 10s. to £39. 15s. three months. Tin, dearer: Straits closed at £63. 2s. 6d. to £63. 12s. 6d. cash, and £63. 13s. 6d. to £64. 2s. 6d. three months; Australian, £64. Lead, steady: Spanish, £10.; English, £10. 1s. 3d. Silesian spelter: ordinary, £13. 15s. Nickel, 1s. 2½d. Antimony, £31. 10s. Quicksilver: first hands, £6. 10s.; second hands, £6. 8s. 6d. Copper shares, steady: Cape, 1¼ to 1½; Copiapo, 1½ to 1¾; Libiola, 3¼ to 3½; Mason and Barry, 1¼ to 1½; Rio Tinto, 13¼ to 13½; Tharsis, 4¼ to 4½.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY

OILS.—Palm oil is firm, and good business has been done £20. 12s. 6d. per ton for Lagos, both on spot and ahead. Olive continues in fair demand, prices keeping steady. Linseed is decidedly dull, but the quotations have not been subjected to any reduction and now stand at 20s. 6d. to 21s. 6d. per cwt. for Liverpool in export casks. Cottonseed is steady: Liverpool refined being quoted 17s. 3d. to 18s. per cwt. Castor oil is firm and stronger on spot. It is difficult to obtain good seconds Calcutta under 2½d. First press French is steady at 2½d. per lb. There is a good demand for tallow and owing to the firm tone of the market, good prices obtain. It is brisk at 4s. 3d. for common, and other grades at full prices. Spirit of turpentine continue to sell steadily at 23s. 6d. per cwt. Petroleum keeps firm with a fairly good inquiry for American at 5½d. to 7d., Russian refined 4½d. per gallon. The tendency of the market towards higher prices.

TYNE CHEMICAL REPORT.

TUESDAY

The slight improvement in the demand for chemicals still continues and fair shipments are now being made. 76/77% caustic soda is scarce, at £9. 10s. per ton; 70% at £7. 15s. per ton. Sulphur steady at £4. to £4. 5s. Other articles are without change as regards price. Hyposulphite of soda scarce and in demand at £6. per ton, 57 casks.

Bleaching powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, nett; caustic soda, 76/77%, £9. 10s. per ton, nett; do., 70%, £7. 15s. per ton, nett; recovered sulphur, 2 cwt. bags, £4. 5s. per ton, nett; soda ash, 48%, £3. 15s. per ton, nett; do., 52%, £4. 2s. per ton, nett; do., 56%, £4. 10s. per ton, nett; alkali, 36%, £2. 1s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, 15s. per ton, nett; do., 52%, £5. 5s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. per ton, nett; do., 1 cwt. kegs, £6. 12s. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. per ton, nett; soda crystals, casks, £1. 16s. 6d. per ton, nett; gross weight; do., 2 cwt. bags, £1. 16s. 6d. per ton, nett; weight; chlorate of potash, 5½d. per lb., less 6%; pearl harden £3. per ton, nett; pure white sulphate of alumina, £4. 2s. per ton, nett; blanc fixe, £7. 10s. per ton, nett; chloride of barium £7. 10s. per ton, nett; carbonate of alumina, £28. 15s. per ton, nett; aluminat of soda, £33. 15s. per ton, nett; in 5 ton lots, £10s. per ton, nett.

SALT.—South Durham salt unaltered, at 9s. 6d. per ton, f.o.b. T.

COALS are tolerably steady, there being a fair demand. They generally, however, remain unaltered. The quotations are:—Northumbrian steam, 8s. 9d. to 9s. per ton; second qualities, 7s. to 8s. per ton; small steam, 3s. to 3s. 6d. per ton; gas coals 6s. 9d. to 7s. 6d. per ton. Coke rather steadier, 13s. to 13s. 6d. per ton. Bunker coals firm, 7s. per ton.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY

It seems to be the case that the general market has met with signs of improvement during the week, though not to the extent of specific advance in any of the lines. The old values are fully maintained, however, and the volume of inquiry for the coming Baltic business has distinctly increased, and is satisfactory so far. It is expected that with seasonable weather over next month, there will be evident betterment to record in the ordinary chemicals.

The shale makes of sulphate of ammonia continue to be pressed the market for immediate disposal, due to the annual balancing centives, and this keeps the article under the normal level. Business only is done, and that at £10. 15s. to £10. 16s. 3d. Deal for forward is meanwhile in abeyance. Nitrate of soda is also low.

There is no change in the section of mineral oils and solid paraffin. Selling in the latter for forward delivery at the higher rates continue to be done, buyers, however, exacting the condition that if the cash should not after all be consummated, they will be held safe, and do with on the lower scale. There is still talk of the chance of an advance in burning oil, but nothing will be decided for some weeks.

Chief prices current are:—Soda crystals, 35s. nett, Tyne; soda ash, 48/52°, £3. 15s. to £4. 5s. nett, Tyne; white ash 48/52°, £4. 10s. to £5. 5s. nett, Tyne; alum in lump, £5. 5s. at Glasgow; caustic soda, white, 74° £8. 12s. 6d., 70/72° £7. 12s. 6d., £6. 12s. 6d., and cream 60/62° £6. 10s., all nett, Liverpool; bleach powder, £6. 5s. to £7., nett, Tyne; saltcake, 17s. 6d.; borax, Engl refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool.

of potash, 4½d. nett, for Scotch and English deliveries (for d. nett, f.o.b. Glasgow); bichromate of soda, 3¾d. nett, for English deliveries (for export, 3½d. nett, f.o.b. Glasgow); potash, 4¾d. less 5%, Liverpool; nitrate of soda, 8s. 10½d.; ammonia, £10. 15s. to £10. 16s. 3d. prompt f.o.b. Leith; ac, first and second white, £39. and £37. nett, any port; copper, £15. 5s. less 5%, Liverpool; paraffin scale, hard soft, 1¾d. to 2½d. per lb.; paraffin wax 120° semi-refined, 2¾d.; paraffin spirit (naphtha), 4½d. to 5d. per gallon; (burning), 4¾d. at works, for Scotch buyers (English to ¾d. lower); ditto (lubricating) 865° £4. 5s.; 885° £4. 10s.; 890/895° £5. to £5. 10s. Week's imports of sugar at were nil.

L PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

The tone of this market shows a decided improvement not perceptible in higher prices. It is created more by the of prices having fallen so low that little is left to fall for es to have a value at all. Buying is more free and orders iful, and even prices of some oils show an improvement. This is attributable to the little improvement in the rupee or others to say. The import of linseed during the week is from River Plate, Bombay, and the Baltic; against such a apply prices have been forced down by 15s. per ton, the sing fairly firm at 18s. 4½d. naked spot. This is also the or March-April. Distant positions have been rather firmer, 3d. has been paid for May-August, and 18s. asked for December. Boiled and refined from 15s. to 30s. per ton port for the week, 1,280 cwt. There have been no arrivals ed during the week, consequently refined cotton oil has been ing with sellers at 15s. 6d. naked spot. April offers at d May-August at 16s. 3d. Casks 17s. 6d., and ordinary s. per ton extra. Export for the week of refined oil,

In spite of the labour difficulties in the boot trade, cod dvanced £1. per ton, and are firm thereat. Some attempts at e being made, but how far successful remains to be seen. are from £16. 10s. to £20. 15s. per ton. Castor oil also is ain a rising market, and is quoted at 2½d. per lb. to 2¾d. live oils from £33. to £37. per ton. Boiled drying oils, on. Soft soap, 14s. 6d. per cwt.

—Linseed cakes somewhat steadier tone, and rather more he recent decline. 95 % pure, £6. 5s. to £6. 7s. 6d.; £5. 7s. 6d. per ton; Russians, £6. to £6. 10s. German, £6. to £6. 2s. 6d. Cotton cakes steady; best 5s. to £3. 7s. 6d. seconds, £3. 2s. 6d. to £3. 5s. Rape inquired for and firmer, £2. 7s. 6d. to £2. 12s. per ton ea. Feeding, £4. 2s. 6d.

—Some disappointment is expressed by makers at the orders for the time of the year. Venetian red, oxide of , blue, green and yellow ochre paints, from £12. per ton. ed paints, in lever tins, from £24. per ton. Imperial black 5. 10s. per ton. Red and white leads remain cheaper. Dry s from 2d. to 9d. per lb. Lime blue, £16. per ton. ver, 25s. to 30s. per cwt.

New Companies.

Stoneware Pipe Co., Ltd.—CAPITAL £4,000., in £1. is company has been formed to manufacture and sell bricks, and artificial stone.

Ltd.—CAPITAL £3,000., in shares of £1. each. This com- ened formed to carry on the business of moss litter dealers, fertilizer manufacturers, etc.

William Espley and Co., Ltd.—CAPITAL £10,000., in shares of £5. each. This company has been formed to acquire and carry on the business of W. Espley at Chesterton, Staffordshire, and to trade as chemical manufacturers. The subscribers to the memorandum of association are:—W. Espley, Chesterton, Newcastle-under-Lyme, manufacturer; J. Birks, Cobridge Hall, Stoke-on-Trent, manufacturer; Miss H. Birks, Cobridge Hall, Stoke-on-Trent; J. J. Holden, Harts- hill, Stoke-on-Trent, clerk; F. C. Mayer, 13, Moorland-road, Burslem, solicitor; E. Holland, Porthill, Stoke-on-Trent, clerk; H. Crutchley, Alsager, Cheshire, M.D.

United Kingdom Oil and Meal Co., Ltd.—CAPITAL £10,000., in 1,000 "A" shares and 1,000 "B" shares of £5. each. This company has been formed to carry out an agreement between the Parent Syndicate Lightning Oil Extractor Company, Limited, of Bradford, and this company, for the purchase of certain patents connected with the extraction of oil from oleaginous vegetables, seeds, nuts, and refuse, with a view to working and developing the same, and to carry on the business of seed crushers, oil extractors, cake and meal manufacturers. The subscribers to the memorandum of association are:—R. C. H. Bonsor, Glenhurst, Saltaire, dye manufacturer; H. C. A. Quitzow, 6, Oak Villas, Bradford, yarn merchant; L. H. Berens, Wells Terrace, Ilkley, journalist; A. Holmes, Earl Villa, Keighley, retired; J. W. Cockerham, Heather Bank, Bingley, retired; J. L. Morley, 54, Ash Grove, Bradford, engineer, etc.; H. A. A. Dombrain, 9, Yew Bank, Ilkley, engineer, etc.

The Patent List.

This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

Gas Washing Apparatus. P. F. Holmes. 5,113. March 11.
Deodorizing Fats and Oils. J. H. Filbert. 5,197. March 12.
Smoke-Consuming Furnaces, etc. E. G. Brewer. 5,225. March 12.
Improved Treatment of Cottonseed. A. J. Boulton. 5,225. March 12.
Making Pure Acetone. O. Porsch. 5,255. March 12.
Disinfecting Materials. J. B. McArthur. 5,258. March 12.
Apparatus for Producing Carbonic Acid. O. Aluis and M. Treitel. 5,299. March 13.
Improved Manufacture of Soap. J. S. Taylor and C. Davies. 5,301. March 13.
Utilising Bilge Water from Nitrate Carrying Vessels. H. J. Dartnell. 5,354. March 13.
Non-Inflammable Solution for Wood, Paper, etc. W. K. Greenway. 5,450. March 13.
Smoke-Consumer. T. Dawson. 5,454. March 15.
Improved Evaporating Apparatus. J. P. Alliot. 5,496. March 15.
Improved Antifriction Metal. H. Potter. 5,512. March 15.
Producing and Liquefying Acetylene Gas. H. H. Lake. 5,529. March 15.
Improved Composition for Antifriction Metal. H. Potter. 5,539. March 15.

Gazette Notices.

PARTNERSHIPS DISSOLVED.

J. CLARK and N. S. HALL, dyers, under the style of Clark and Hall, Leeds.
T. BEECHAM and J. BEECHAM, manufacturers of proprietary articles, known as Beecham's Pills, St Helens, and elsewhere, under the style of Thomas Beecham.

BANKRUPTCY ACTS, 1883 and 1890.

Receiving Order.

BRAIM, JOSEPH, and BRAIM, JAMES WILSON, trading as Braim and Sons, Sleights, near Whitby, wool, hide, skin, and tallow brokers.

Adjudication.

ALLEN, J. FENWICK, Widnes, in the employ of the United Alkali Co., Ltd.

IMPORTS OF CHEMICAL PRODUCTS

AT

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

ending March 16th.

822 pkgs.

W. Johnston & Co.

Lime—

822 pkgs.

R. & J. Garraway

Acetic Acid—

Holland, 165 pkgs. A. & M. Zimmermann

Acids—

Germany, 4 pkgs. L. & I. D. Jt. Co.

Acetone—

Holland, 2 G. Rahn & Co.

Alkali—

Holland, 200 c. Pillow, Jones & Co.

Alum—

Belgium, 25 pkgs. R. W. Greeff & Co.

Aluminium—

Germany, 46 H. Lambert

France, 200

Locke, Lancaster & Co.

Arsenic—

Germany, 5 pkgs. W. J. Crook

Asbestos—

Italy, £230 London Asbestos Co.

" 120 Baynham & Co.

ld—
10 brls.
102 brls.
4 brls. 5 cs. 1 ck.
20
65 3
2
ed Oil—
10 brls. M. Bell
807
13 cs.
2,220
Tartar—
5 brls. 5 cks.
8 cs. 6 brls. M. D. Frango-
pulo & Co.
6 bgs. G. S. Bruce
24 Kolp & Co.
10 R. Henderson
& Co.
15
30 bxs.
412 bgs.
20 brls.
95 cks.
10 5 kgs. W. Bing-
ham
6
200 Oak Extract Co.,
Ltd.
164
250 cks.
50 100 bxs.
1 ck. J. T. Fletcher
& Co.
5 t. E. Choloner & Co.
139 chits.
235 t. P. Leckie & Co.
1,198 bgs. D. Sassoon
& Co.
837 A. Ewart & Co.
1,334 E. D. Sassoon
& Co.
1,013
1,500 bls. Bartoning Gebr.
82 Pinto Leite &
75 bls. Nephew
1 cs.
280 bgs. N. W. Jackson
850
177 bgs. A. Ewart & Co.
90
392 bgs. Barry Brs.
76 t.
1,790 bgs. Papayanni &
239 Jeremias
234
100 bgs. N. W. Jackson
250
402 brls. 50 pails.
few, 800
1,650 t. Peruvian Corpora-
tion
296 bgs.
15 cks. Gabain Brs.
17 cs. J. T. Fletcher
38 cks. & Co.
4 crts. J. T. Fletcher
& Co.
3 cs.
3,000 t. Darwen & Mostyn
Iron Co.
12 bgs.

Mineral White—
Fiume, 100 bgs.
Genoa, 20
Ochre—
Marseilles, 5 cks. J. L. Lyon
& Co.
Marseilles, 83
Paint—
B. Ayres, 59 cks. Frith, Sands,
& Co.
Paraffin Scale—
New York, 732 brls. Thompson &
Bedford
211 Standard Oil Co.
Baltimore, 400
Paraffin Wax—
Philadelphia, 235 brls.
Phosphate—
Ghent, 250 bgs.
Bona, 700 t.
Phosphate of Lime—
Rotterdam, 1 ck.
Pitch—
Marseilles, 49 brls. 5 cks.
Potash—
Antwerp, 9 dms.
Rosin—
Boston, 1,200 brls.
Saltpetre—
Karachi, 144 bgs.
Hamburg, 40 kgs. 2 brls. 26 cks.
Soap—
Marseilles, 12 cs.
Boston, 2 Evans, Sons, & Co.
Zante, 550 bxs. C. A. Holden
Boston, 15 cs.
Genoa, 4 425 pkgs.
Naples, 28 P. Behrends
Philadelphia, 25 S. Ward
Bari, 121 4 bxs.
Newport News, 170 brls.
Corfu, 1
Soapstone—
Genoa, 604 bgs. W. Harrison
& Co.
Trieste, 200 bls.
Bordeaux, 400 G. G. Blackwell,
Sons, & Co.
50 bls.
Starch—
Fiume, 100 bgs. W. T. Gadduni
& Co.
New York, 200 20 bls.
Portland, 100 275 sks.
Antwerp, 20 bxs. P. Forbes
186 cs. J. T. Fletcher
& Co.
Stearine—
Rotterdam, 26 bls.
Antwerp, 62 bgs.
Sulphur Ore—
Huelva, 1,430 t. Matheson & Co.
Tallow—
M. Video, 100 pps.
Rotterdam, 30 brls.
Tar—
Boston, 50 brls. A. Walford &
Sons
Tartar—
Bordeaux, 8 cks.
Tartaric Acid—
Marseilles, 1 brl.
Bordeaux, 4 cks.
Treacle—
Bordeaux, 2 cs.
Rotterdam, 2 cks.
Varnish—
Ghent, 2 brls.
B. Ayres, 41 cs. Frith, Sands,
& Co.
White Lead—
Ghent, 31 brls.
Trieste, 5 cs. Mander Brs.
Wood Pulp—
Oporto, 1,000 bls. Crama Wood
Pulp Co.
Sannesund, 6,962 40 lds.
203
Wood Spirit—
Hamburg, 2 dms.
Zinc Oxide—
New York, 50 brls.
Rotterdam, 75 cks.
Antwerp, 95 30
Zinc White—
Hamburg, 80 cks.
Rotterdam, 125

MANCHESTER.

Week ending March 16th.

Acetate of Lime—
New York, 1,411 bgs.
Acid—
Antwerp, 1 ck.
Albumen—
Hamburg, 3 cks
Barytes—
Antwerp, 50 bgs.
Rotterdam, 22 cks.
Bone Ash—
Boca Zagnari, 558 t.
Castor Oil—
Antwerp, 12 brls.
Colours—
Treport, 4 cks. Arnati &
Harrison
Rotterdam, 53 cs. 92 brls.
Hamburg, 3
Dyestuffs—
Alizarine
Rotterdam, 18 cks. 1 cs.
Extracts
Treport, 20 cks. 108 cs. Arnati &
Harrison
Nantes, 60
Bordeaux, 50
Hamburg, 18 cks.
Palermo, 250 bgs. 500 bls.
Farina—
Rotterdam, 385 bgs.
Hamburg, 402
Limestone—
Antwerp, 2 crts. 1 cs.
Mineral White—
Fiume, 100 bgs.
Ochre—
Treport, 29 cks. Arnati &
Harrison
Rotterdam, 44
Potash—
Treport, 16 cks. 41 dms.
Arnati & Harrison
Rotterdam, 10
Bordeaux, 8
Sodium Acetate—
Treport, 33 bgs. Arnati &
Harrison
Sodium Bicarbonate—
Hamburg, 1 ck.
Starch—
New York, 500 bgs.
Rotterdam, 130 cs.
Ghent, 60
Fiume, 100
Stearine—
New York, 7 hds. Co-op. W'sale
Society, Ltd.
Sulphuric Acid—
Rotterdam, 5 cs.
Tallow—
New York, 25 hds. Co-op.
W'sale Society, Ltd.
Tartar—
Rotterdam, 20 kgs.
Hamburg, 2 cks.
Bordeaux, 2
Tartaric Acid—
Antwerp, 7 cks.
Rotterdam, 2 20 kgs.
Ultramarine—
Rotterdam, 4 cks. 8 cs.
Wood Pulp—
Christiania, 1,750 bls.
Skien, 60
Wood Spirit—
Hamburg, 4 dms.
Zinc Oxide—
Antwerp, 100 brls.
Zinc Sulphate—
Rotterdam, 5 brls.

HULL.

Week ending March 16th.

Acetate of Lime—
Boston, 500 bgs. Wilson,
Sons, & Co., Ltd.
Antimony—
Hamburg, 4 cs. Wilson,
Sons, & Co., Ltd.
Barytes—
Antwerp, 56 cks. Bailey &
Leatham
70 bgs. Wilson, Sons,
& Co., Ltd.

Chemicals (otherwise undescribed)

Bremen, 5 pks. Veltmann
& Co.
Hamburg, 4 cs. W. Cussons
& Co.
Antwerp, 1 Wilson, Sons,
& Co., Ltd.
Dunkirk, 50 dms. "
Cod Oil—
Aalesund, 45 brls. Wilson, Sons,
& Co., Ltd.
Bergen, 21 "
Colours—
Rotterdam, 52 pkgs. 1 cs. W. & C. L.
Ringrose
8 7 cks. Hutchinson & Son
4 cks. Wilson, Sons,
& Co., Ltd.
Antwerp, 12 brls. J. W. Davis & Son
1 cs. Storry, Witty,
& Co.
Dextrine—
Hamburg, 150 bgs. Wilson, Sons,
& Co., Ltd.
Dyestuffs—
Annatto
Boston, 18 bgs. Wilson,
Sons, & Co., Ltd.
Madder
Rotterdam, 1 ck. W. & C. L.
Ringrose
Valonia
Smyrna, 198 t.
Farina—
Harlingen, 1,110 bgs. W. & C. L.
Ringrose
Ghent, 116 bxs. Wilson,
Sons, & Co., Ltd.
Hamburg, 20
Manure—
Kroksholm, 247 t.
Mercury—
Hamburg, 6 btls. Wilson, Sons,
& Co., Ltd.
Pitch—
Rotterdam, 24 cks. Hutchinson
& Son
Potash—
Antwerp, 11 dms. Wilson,
Sons, & Co., Ltd.
Dunkirk, 20 "
Pyrites—
Huelva, 1,317 t.
Rosin—
Rotterdam, 6 cks. Hutchinson
& Son
Saltpetre—
Hamburg, 37 cks.
Soda—
Rotterdam, 8 cks. W. & C. L.
Ringrose
Sodium Nitrate—
Hamburg, 41 bgs. Wilson,
Sons, & Co., Ltd.
Starch—
Bremen, 1,980 cs. Veltmann & Co.
Stearine—
Antwerp, 5 cs. Wilson, Sons,
& Co., Ltd.
Tartaric Acid—
Rotterdam, 2 cks. Hutchinson
& Son
Treacle—
Boston, 525 brls. Wilson, Sons,
& Co., Ltd.
Turpentine—
Antwerp, 1 brl. Sissons Bros.
& Co.
Ultramarine—
Rotterdam, 1 cs. Hutchinson
& Son
8 cks. 3 pkgs. W. &
C. L. Ringrose
Waste Salt—
Hamburg, 533 bgs. Wilson, Sons,
& Co., Ltd.
104 Bailey & Leatham
300 Wilson, Sons,
& Co., Ltd.
White Lead—
Antwerp, 27 cks. Bailey &
Leatham
Rotterdam, 20 Hutchinson
& Son
10 cs. W. &
C. L. Ringrose

Antwerp,	6 cks.	Wilson, Sons, & Co., Ltd.
Wolfram—	22	Tudor & Sons
Hamburg,	7 cs.	Wilson, Sons, & Co., Ltd.

GLASGOW.

Week ending March 21st.

Alkali—	Rotterdam,	20 dms.	J. Rankine & Son
Aniline—	Rotterdam,	2 cs. 7 cks.	J. Rankine & Son
Aniline Colours—	Hamburg,	2 cs.	
Arachide Oil—	Rotterdam,	4 cks.	J. Rankine & Son
Barytes—	Rotterdam,	7 cks.	J. Rankine & Son
Bone Meal—	Karlsruhe,	1,498 bgs.	
Boric Acid—	Leghorn,	31 cks.	
Carbonic Acid Gas—	Rotterdam,	15 tubes	J. Rankine & Son
Chemicals (otherwise undescribed)	Hamburg,	4 cs.	
Colours—	Rotterdam,	2 ck. 2 kgs.	J. Rankine & Son
Cream of Tartar—	Barcelona,	20 brls.	
Dyestuffs—	Alizarine		
	Rotterdam,	47 bds. 1 cs.	J. Rankine & Son
	Argile		
	Barcelona,	35 cks.	
	Rotterdam,	2,576 bds.	
	Sumar	125	
	Palman,	100 bgs.	
Glass—	New York,	250 brls.	
	Philadelphia,	400	

Lamp Black—	Gothenburg,	30 cs.	
Paint—	Genoa,	8 cs.	
Pitch—	Hamburg,	74 cks.	
Potash—	Rotterdam,	40 cks.	J. Rankine & Son
Pumice Stone—	Leghorn,	5 cs. 2 cks. 70 bgs.	
Pyrites—	Huelva,	1,334 t.	Tharsis Co.
Rosin—	New York,	1,073 brls.	
Saltpetre—	Hamburg,	32 cks. 20 kgs.	
Soap—	Philadelphia,	400 bxs. 25 crts.	
Starch—	Rotterdam,	35 cs.	J. Rankine & Son
Stearine—	New York,	1,200 bgs.	J. Rankine & Son
Tallow—	Amsterdam,	93 bgs.	
Tartar—	New York,	20 tcs.	
Treacle—	Bordeaux,	5 cks.	
Verdigris—	Philadelphia,	2,213 brls.	
Yarnish—	New York,	25	
Verdigris—	New York,	10 brls. 1 cs.	
Waste Salt—	Bordeaux,	3 cks.	
White Lead—	Hamburg,	54 cks. 612 bgs.	
Wood Pulp—	Rotterdam,	18 cks.	J. Rankine & Son
	Gothenburg,	444 bls.	
	Christiania,	3,000	R. & W. Watson
	"	5,417	Brown, Stewart & Co.
	Fredrikshald,	473	
	Christiania,	691	
Zinc Oxide—	New York,	130 brls.	
Zinc White—	Rotterdam,	100 cks.	J. Rankine & Son

TYNE.

Week ending March 16th.

Alum Earth—	Hamburg,	22 cks.	Tyne S. S. Co.
Barium Chloride—	Hamburg,	188 bgs.	Tyne S. S. Co.
Carbonic Acid Gas—	Rotterdam,	100 tubes.	Tyne S. S. Co.
Cellulose—	Trondhjem,	320 bls.	
Cod Oil—	Bergen,	11 brls.	
Limestone—	Trondhjem,	6	
Phosphate Rock—	Beaufort,	3,481 t.	Langdale's Chem. Manure Co.
Rosin—	Charleston,	3,219 brls.	
Sulphuric Acid—	Hamburg,	4 cks.	Tyne S. S. Co.
Superphosphate—	Antwerp,	305 bgs.	Tyne S. S. Co.
Turpentine—	Charleston,	200 brls.	
Wood Pulp—	Christiania,	20 t.	
	Laurvig,	41 bls.	
Zinc Oxide—	Antwerp,	30 brls.	Tyne S. S. Co.

GOOLE.

Week ending March 13th.

Aniline—	Ghent,	18 pkgs.	
Antimony—	Boulogne,	2 cks.	
Barytes—	Hamburg,	5 cks.	
	Antwerp,	100 bgs.	
Caoutchouc—	Boulogne,	1 cs.	
Colours—	Ghent,	1 cs.	
	Hamburg,	13 56 cks.	

Dyestuffs—

Alizarine	Rotterdam,	29 cks.
Fustic	Hamburg,	50 t.
Logwood	Florida,	400 t.
Monte Christi,	Jamaica,	1,400 1,546
Dyestuffs (otherwise undescribed)	Boulogne,	14 cs. 30 cks. 8 pkgs.
Glucose—	Rotterdam,	31
Plumbago—	Hamburg,	20 cks.
Potash—	Dunkirk,	2 cks.
Pyrites—	Huelva,	22 cks. 30 dms.
Rosin—	Savannah,	1,290 t.
Saltpetre—	Hamburg,	3,015 brls.
Sodium Silicate—	Rotterdam,	13 cks.
Waste Salt—	Hamburg,	1 ck.
	Hamburg,	1,160 cks.

GRIMSBY.

Week ending March 16th.

Aniline Dyes—	Antwerp,	41 cks.
Caoutchouc—	Hamburg,	7 ck.
Chemicals (otherwise undescribed)	Rotterdam,	1
Colours—	Antwerp,	10 cks.
	Hamburg,	1 cs.
Dyestuffs—	Hamburg,	21 cks. 5 pkgs.
Extracts	Antwerp,	21
Plumbago—	Dieppe,	25 cks.
Zinc Ashes—	Hamburg,	1 ck.
	Antwerp,	10 cks.

EXPORTS OF CHEMICAL PRODUCTS

OF

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.			
Week ending March 20th.			
Acids—			
Boracic	30 pkgs.	£47	
E. London,	24 cs.	10	
Alkali—			
Cerium,	3 t. 6 c.	£36	
Delagoa Bay,	10 kgs.	30	
Yokohama,	1	2	
Alum Cake—			
Calcutta,	18 t.	£75	
Ammonia—			
Hamburg,	2 c.	£25	
Gothenburg,	10 dms.	20	
Ammonia (Liquid)—			
Algoa Bay,	5 c.	£54	
Bombay,	15 cs.	54	
Ammonium Carbonate—			
Treport,	4 t. 4 c.	£133	
B. Ayres,	1	35	
Boulogne,	1	40	
Melbourne,	1	5 cs. 22	
Dunkirk,	18	22	
Newcastle,	1	35	
Yokohama,	2	80	
Calcutta,	14	13	
Ammonium Chloride—			
Melbourne,	3 cks.	£24	
Constantinople,	1 t.	34	
Bombay,	1	10 c.	
Samaru,	10	19	
Romulo,	5	10	
Rotterdam,	13	25	
Piscas,	10	19	
Adelaide,	7	13	
Calcutta,	6	15	
Ammonium Sulphate—			
Martinique,	9 t.	£99	
Ghent,	472	5,460	
Rotterdam,	100	1,150	
Bremen,	398	4,466	
Antwerp,	438	4,830	
Amsterdam,	50	550	
Hamburg,	251	2,875	
Dunkirk,	150	1,650	
Valencia,	50	550	
St. John, N.B.,	1	12	
Ostend,	138	1,553	
Canaria,	17	202	
Demerara,	43	493	
Anhydrous Ammonia—			
Cologne,	28 cyldrs.	£120	
Arsenic—			
Reval,	5 t.	£85	
Bisulphite of Lime—			
Calcutta,	13 c.	£12	
Bleaching Powder—			
Boston,	56 t. 3 c.	£170	
Melbourne,	5	63	
Borax—			
Melbourne,	2 t.	£44	
Hamburg,	10 cks.	24	
Santos,	1	6 c.	20
Caustic Soda—			
Natal,	1 t.	£25	
Melbourne,	5	2 c.	36
Algoa Bay,	1	8	9
Delagoa Bay,	1	30	
Fremantle,	2	7	
E. London,	2	5	26
Philadelphia,	14	10	139
Brisbane,	5	8	41
Chemicals (otherwise undes.)—			
Copenhagen,	19 c.	£42	
E. London,	180 pkgs.	95	
Algoa Bay,	99	86	
Melbourne,	1 cs. 37 kgs.	113	
Singapore,	4	1 ck. 50 dms. 30	
Auckland,	2 pkgs.	43	
Philadelphia,	10 t. 2 c.	1,302	
Adelaide,	1	39	
Bombay,	1	2 pkgs. 56	
Cape Town,	2 cs. 6 cks. 16	20 dms. 98	
Brisbane,	35 kgs.	23	
Natal,	5	11	29
Chloride of Lime—			
Cape Town,	1 t. 10 c.	£14	
Melbourne,	16	10	143
Itric Acid—			
Amsterdam,	7 cks.	6 kgs. £92	
Sevilla,	10 c.	£60	
Copenhagen,	5	31	
Perth,	1 ck.	11	
Cologne,	1 t.	129	
Lisbon,	5 cks.	34	
Rotterdam,	5	15	123
Bombay,	2	15	
Brussels,	2 t. 2	10	406
Hamburg,	4 pkgs. 19 c.	200	
B. Ayres,	1 c.	6	
Coal Products—			
Alizarine			
Barcelona,	20 cks.	£225	
Boston,	50	658	
Aniline Dyes			
Calcutta,	1 cs.	£102	
Tientsin,	10	2	
Aniline Oil			
Ghent,	10 cks.	£102	
Anthracene			
Rotterdam,	202 cks.	£102	
Dusseldorf,	135	£102	
Benzol			
Rotterdam,	55 cks.	£102	
Boulogne,	63	100	
Carbolic Acid			
Marseilles,	80 cases.	£102	
Boca,	4 cks.	10	
Rotterdam,	40 dms.	10	
Yokohama,	100 cks.	10	
Antwerp,	20	10	
New York,	25	10	
Coal Tar Dyes			
Boston,	5 pkgs.	£102	
Naphtha			
Melbourne,	20 dms.	£102	
Naphthaline			
New York,	33 cs.	£102	
Philadelphia,	26 cks.	10	
Pitch			
Antwerp,	1,040 t.	£102	
Dunkirk,	431	10	
Sulina,	24 brls.	10	
Boston,	473	10,000 bgs.	10
Toronto,	28	10	
New York,	334	10	
Galatz,	25	10	
Tar			
St. Kitts,	3 volts.	10	
E. London,	370 dms.	10	
Natal,	890	10	
Brussels,	1 ck.	10	
Sulina,	36 brls.	10	
Toluol			
Hamburg,	13 cks.	£102	

Alphate— 64 t. £1,020 20 315 7 5 c. 119 3 15 60 5 75 15 14	Sodium Carbonate— Algoa Bay, 1 t. 1 c. £8 Sodium Silicate— Melbourne, 3 t. 6 c. £8 Sodium Sulphate— Ghent, 570 t. £547 Sodium Tartrate— Toronto, 3 cks. £44 Strontium Nitrate— Calcutta, 1 t. 5 c. £33 Sulphate of Lime— Havre, 5 t. £61 Sulphur— Pt. Elizabeth, 4 t. 19 c. £33 Lisbon, 2 1 17 E. London, 50 kgs. 100 cks. 112 Sulphuric Acid— Pt. Elizabeth, 1 t. 12 c. £20 Madeira, 20 dms. £15 Perth, 17 cs. 22 Algoa Bay, 18 pkgs. 30 E. London, 6 t. 9 25 59 Superphosphate— Havre, 20 t. £80 St. Kitts, 22 69 Canaria, 12 53 Valencia, 300 260 Tartaric Acid— Algoa Bay, 1 t. £5 Melbourne, 1 t. 91 Lyttelton, 3 14 Brisbane, 10 51	San Francisco, 100 San Sebastian, 33 15 Borax— Hamburg, 40 t. 19 c. 1 q. £819 Rotterdam, 2 1 47 Antwerp, 6 3 2 124 Ghent, 3 1 3 66 Yokohama, 3 9 80 Vera Cruz, 1 c 3 9 Algoa Bay, 2 42 Calcium Chloride— Napi & N. Z., 5 t. 4 c. £12 Camphor— Salaverry, 1 cs. 51 Tonal, 1 28 Caoutchouc— Rangoon, 13 cs. 4 Santos, 4 Carbolic Acid— Rotterdam, 11 t. £482 Hamburg, 1 2 c. 55 Philadelphia, 1 3 q. 51 Odessa, 9 3 28 Genoa, 1 57 Barcelona, 12 33 Hong Kong, 12 1 10 Yokohama, 2 10 22 Castor Oil— Accra, 10 cs. Caustic Potash— New York, 5 t. 7 c. £136 Caustic Soda— Alexandria, 91 dms. Amsterdam, 12 Bahia, 25 Baltimore, 160 Barcelona, 306 Bari, 53 Barranquilla, 12 Bombay, 76 Boston, 305 Brindisi, 14 Calcutta, 177 Callao, 80 Cape Town, 10 Ceara, 15 Dunkirk, 30 Higo, 119 Hong Kong, 3 cks. Ibrail, 9 Leghorn, 115 Madeira, 10 Malta, 17 Maracaibo, 10 Messina, 10 Naples, 10 New York, 475 50 bxs. Oporto, 54 Palermo, 15 Philadelphia, 50 100 kgs. Piraeus, 30 Pisco, 90 Rouen, 35 St. John's, N'd., 30 San Francisco, 25 San Sebastian, 35 Santander, 65 Santos, 50 Seville, 90 Shanghai, 6 Tampico, 40 Valencia, 8 Valparaiso, 60 Vera Cruz, 30 Vigo, 10 Yokohama, 200 Chemicals (otherwise undescribed) Stettin, 11 t. 2 q. £30 Philadelphia, 12 18 c. 428 New York, 5 2 167 Gothenburg, 5 5 10 Odessa, 8 263 Genoa, 2 16 95 Ancona, 3 5 Venice, 1 34 Catania, 1 25 Alexandria, 2 14 74 Calcutta, 15 28 China Clay— Bombay, 32 t. 15 c. 1,328 cks. Boston, 30 6 277 Lisbon, 10 bgs. Philadelphia, 10 bgs. Chloroform— Vera Cruz, 1 cs. Citric Acid— Vigo, 2 c. £16 Coal Products— Aniline Colours Bombay, 10 cs.	Aniline Salts Barcelona, 5 cs. Boston, 20 Philadelphia, 20 10 dms. St. Nazaire, 5 cks. Creosote Oil Lisbon, 1,100 brls. Naphtha Trinidad, 1 ck. Nitro-Benzol New York, 20 cs. Pitch Ibrail, 85 brls. Rouen, 252 t. 8 c. Tar Accra, 10 brls. Baltimore, 60 cks. Cheribon, 50 Samarang, 12 Tar Salts New York, 13 cks. Cobalt Oxide— Rotterdam, 3 c. £80 Copperas— Almeria, 3 t. £5 Galatz, 3 4 c. 3 q. 5 Copper Sulphate— Vigo, 2 t. 9 c. 1 q. £42 Piraeus, 1 3 15 Corral, 9 3 10 Cette, 140 6 2,172 Lisbon, 5 19 2 94 Geneva, 4 16 63 Rouen, 15 5 1 240 Adelaide, 1 14 Valparaiso, 5 73 Santos, 4 18 1 80 Seville, 5 10 1 76 Vera Cruz, 3 42 Patras, 1 2 16 Deli, 11 5 1 142 Sydney, 15 220 Bordeaux, 369 11 5,995 Algiers, 5 7 77 Naples, 18 19 1 271 Genoa, 93 4 3 1,373 Tarragona, 5 2 213 Vigo, 10 1 1 Venice, 81 12 1,180 Boindisi, 9 14 133 Ancona, 10 18 2 157 Bari, 23 19 1 595 Messina, 2 2 30 Oporto, 4 19 75 N. Orleans, 3 9 3 52 Nantes, 113 6 1 1,759 Leghorn, 38 1 562 Farina— Bombay, 6 bgs. Guano— Barcelona, 57 t. 6 c. £559 Iron Oxide— Lisbon, 13 c. 2 q. £7 Lamp Black— Iquique, 2 cks. Lead Acetate— Bombay, 5 c. £5 Lime— Pt. Natal, 29 t. 11 c. £97 Bathurst, 4 15 5 Portland, 21 tcs. Magnesia— Havre, 97 cs. Santos, 14 Magnesium Carbonate— Mexico, 14 c. £23 N. Orleans, 13 cs. Magnesium Chloride— Bombay, 2 t. £13 Magnesium Sulphate— Alexandria, 40 kgs. St. Nazaire, 2 cks. Manganese— Trieste, 14 cks. Manure— Antwerp, 22 t. 3 c. 1 q. £74 Havre, 50 1 159 Sierra Leone, 10 6 Madeira, 24 10 175 Gd. Canary, 66 10 450 Bordeaux, 50 1 144 Valencia, 70 14 1 185 Metallic Sodium— Rotterdam, 5 t. 5 c. £969 Ochre— Lisbon, 7 brls. Valparaiso, 11 kgs. 80 cks. Oxalic Acid— N'w'stle, N. S.W., 2 t. £22
---	--	--	---

LIVERPOOL.

Week ending March 20th.

Alum—

Toronto, 3 t. 12 c. 1 q. £20	
Lisbon, 5 22	
Bombay, 15 5	
Adelaide, 1 7	
Alexandria, 13 11 71	
Tunis, 2 6 10	
Havana, 6 4 3 20	
Sydney, 1 6	
Galatz, 10 4 50	

Alum Cake—

Calcutta, 5 t. 2 c. 2 q. £18	
------------------------------	--

Ammonium Carbonate—

Calcutta, 10 c. £17	
Havre, 1 ck. 5	
Portland, 2 3 q. 5	
Venice, 12 19	
Barcelona, 1 t. 3 38	

Ammonium Chloride—

Smyrna, 12 c. £22	
Tunis, 2 3	
Antwerp, 1 t. 1 26	
Galatz, 4 7	
Genoa, 1 24	
Patras, 4 8	
Barcelona, 3 5 1 q. 121	
Palermo, 10 3 19	
Mexico, 3 6	
San Francisco, 3 2 91	

Ammonium Sulphate—

Pekalongan, 50 t. £562	
New York, 25 4 c. 2 q. 303	
Tagal, 101 16 1,212	
Bordeaux, 10 6 2 116	
Ferrol, 14 10 174	
St. John, N.B., 1 7 3 16	
Las Palmas, 15 3 3 173	
Demerara, 124 17 3 1,562	
Barcelona, 90 13 1,051	
Valencia, 243 3 2,738	

Antimony—

Halifax, 5 cs. £75	
--------------------	--

Arsenic—

M. Video, 3 c. 1 q. £7	
------------------------	--

Asbestos—

Rosario, 3 cs. £74	
Tocopilla, 4 16	

Bleaching Powder—

Ancona, 72 cks. 55 kgs.	
Baltimore, 119 40 bxs.	
Barcelona, 2 43 cs.	
Bilbao, 29 220	
Bombay, 442 40 bxs.	
Boston, 442 40 bxs.	
Calcutta, 220 40 bxs.	
Cape Town, 66 152 brls.	
Ghent, 66 10	
Melbourne, 15 50	
N. Orleans, 179 69 bls.	
Oporto, 35 7	
Philadelphia, 385 7	
St. John's, N'd., 20 7	

Paint—

Accra,	5 cks.	10 kgs.
Alexandria,		
Barbadoes, 14 cs.		
Batanga,	2	
Benin,		4 dms.
Bonny,		10
Boston,	1	
Cadiz,		10
Calcutta,	3	
Callao,	14	
Colonel, 68 brls.		
Curacao,	1	
Fayal,		40
Ferrol,	2	
Guayaquil,		3
Havana,	5	13
Lagos,		60
Lisbon,	12	
London,	5	
Malta,		40
Manila,	16	
Manzanillo,	4	
Monaco,		17
New York,	8	112
Old Calabar,		8
Oporto,	21	13
Panama,	14	5
Para,		
Pinar, 18 brls.		
Pointe,	2	
Pt. Natal, 2 crts.		240
Plate, 1 cs.		
Rangoon,	15	
Rio de Janeiro, 12		
St. John's, Nfld., 2		
Thomas,		1 cs.
Sierra Leone,	60	
Smyrna,	70	
Suez,	66	
Talcahuano,		11
Valparaiso,	15	36
Vigo,		

Paints' Colours—

Batanga,	127 cks.	5 cs.
Bombay,		38
Bonny, 1 br.		7 dms.
Bremer,		200 lbs.
Calcutta,	2	
Capetown,	40	10
Colonel,	3	2
Malta, 5 brls.		80 kgs.
Manzanillo,	40	
New York,	23	6
Oporto,	74	
Oporto, 1 br.		
Para,	20	
Penang,	60	
Pinar,	9	
Portland,		3
Rio de Janeiro,		2
Rouen,	60	100 lbs.
Smyrna,	60	6 kgs. 2 dms.
Suez, 18 brls. 11 cs.	20	20
Talcahuano,	5 cks.	
Valparaiso,	1,225 cs.	380
Vera Cruz,	6 cks.	

Phosphate—

Valencia, 30 t. £87

Phosphorus—

Demerara, 4 t. £40

Hingo, 2 t. £30

Potassium Bichromate—

Pinar, 1 t. £46

St. Nazaire, 3 t. 6

Potassium Carbonate—

Oporto, 11 t. 3 q. £14

Potassium Chlorate—

Rouen, 1 t. 10 c. £51

San Paulo, 2 120

Naples, 12 35

E. London, 8 18

Lisbon, 11 33

Higo, 12 10 590

San Juan, 2 98

New York, 9 10 440

Boston, 2 10 130

Cape Town, 1 46

Hamburg, 14

Potassium Cyanide—

Portland, 2 c. £10

Potassium Prussiate—

Oporto, 4 c. £20

Barcelona, 10 t. 14 887

Quicksilver—

Valparaiso, 50 brls.

Salt—

Akassa, 58 t.

Amsterdam, 200

Antwerp, 546

Baltimore, 500

Boston, 200

Bridgman, 377

Calcutta,	2,275
Conakry,	100
Copenhagen,	200
Demerara,	26
Ghent,	570
Halifax,	14
Hamburg,	
Lagos,	40
Madeira,	6
Melbourne,	150
Monrovia,	21
M. Video,	5
Newcastle,	450
N. Orleans,	70
Otago,	5
Para,	100
Philadelphia,	350
Portland,	150
Rangoon,	600
Rotterdam,	250
S. John's, N. B.	400
Salt Pond,	43
Sapeli,	20
Sulina,	40
Talcahuano,	3
Trinidad,	134
Valparaiso,	153
Wellington,	15

Salt Cake—

Philadelphia,	144 t.	8 c.	£217
Leghorn,	75		112
Lisbon,	11	6	3 q. 12
Baltimore,	209	13	3 284
Antwerp,	50	2	107

Saltpetre—

Ceara,	2 t.	10 c.	£75
Tampico,	1	10	1 q. 44
Natal,	2	10	12
San Francisco,	2	10	58

Sheep Dip—

Punta Arenas,	12 t.	17 c.	2 q. £430
M. Video,	5	17	131
E. Ayres,	12	16	356
New York,		3	5

Slag—

Nantes, 262 t.

Soap—

Akassa,	28 bxs.
Alexandria,	1 cs.
Algoa Bay,	1,580
Antofagasta,	41
Appam,	50
Baltimore,	19
Barbadoes,	700
Bathurst,	72
Benin,	150
Bluefields,	100
Bombay,	355
B. Ayres,	36
Buguma,	600
Cape Palmas,	25
Cape Town,	3,415
Casablanca,	10
Constantinople,	20
Demerara,	1,600
Dunkirk,	50
Durban,	100
E. London,	2,185
Gibraltar,	240
Guayaquil,	1,120
Halifax,	50
Kingston, Ja.,	1,600
La Guayra,	50
Madras,	5
Manaos,	100
Meneda,	500
Monrovia,	86
Mosel Bay,	205
New York,	2,045
Para,	32
Penang,	34
Pt. Elizabeth,	1,622
Portland,	20
Pt. Natal,	2,620
Quittah,	20
Rio de Janeiro,	200
S. John's, Nfld.,	230
Salt Pond,	50
Shanghai,	1,900
Sierra Leone,	201
Tangar,	30
Teneriffe,	395
Valparaiso,	400
Warri,	150

Soda—

Para, 4 brls.

Portland, 1 ck.

Soda Alkali—

Alicante, 30 cks.

Barcelona, 25

Buffalo, 40 brls.

Oporto, 35

Philadelphia, 10

Savanna, 100

Smyrna, 40

Syra,

Valencia,	110
Soda Ash—	
Ancona,	16 cks.
Baltimore,	648
Barcelona,	2,616 bgs.
Bari,	110
Boston,	200
B. Ayres,	333
C. Cutta, 250 kgs.	212
Ceara,	100
Hamburg,	1,200
Higo,	10
Hong Kong,	70
Lisbon,	80
M. Video,	3
Montreal,	25
New York,	320
Oporto,	44
Philadelphia,	10,084
Portland,	165
Rio de Janeiro,	2,718
Rockhampton,	100
Samarang,	50
San Francisco,	22
Santas,	10
Savanna,	90
Syria,	20
Varna,	25
Wellington,	100
Yokohama,	100

Soda Crystals—

Alexandria,	7 brls.
Bombay,	125 kgs.
Boston,	224
Calcutta,	90
Gibraltar,	55
Halifax,	75
Malta,	95
New York,	140
Oporto,	34
Pt. Natal,	50
St. John's, Nfld.,	70
Valparaiso,	10

Sodium Bicarbonate—

Alexandria,	20 kgs.
Algiers,	30
Auckland,	47
Baltimore,	430
Barcelona,	125 cks.
Bombay,	110
Cadiz,	10 bgs.
Calcutta,	5
Canterbury,	50
Cape Town,	40
Copenhagen,	4
Corunna,	10
Dunedin,	200
Genoa,	56
Halifax,	100
Hamburg,	204
Havre,	3
Leghorn,	40
Malta,	20 bgs.
Marseilles,	70
Melbourne,	300
Mersyne,	20
M. Video,	100
Montreal,	150
Naples,	70
Nantes,	10
N. Orleans,	10
New York,	100
Portland,	10
Pt. Natal,	20
Rockhampton,	200
Rouen,	20
S. John's, Nfld.,	25
San Francisco,	200
Santos,	80
Singapore,	20
Stamboul,	50
Tampico,	400
Trieste,	50
Venice,	80
Vera Cruz,	20
Wellington,	25
Yokohama,	1,000

Sodium Chlorate—

Boston, 50 kgs.

Hamburg, 20

Rotterdam, 4

Vera Cruz, 10

Sodium Hyposulphite—

Callao, 30 kgs.

N. Orleans, 100 cks.

Sodium Oxide—

New York, 8 cs.

Sodium Silicate—

Bombay, 5 brls.

Calcutta, 10

Madeira, 5

Sodium Sulphate—

Bombay, 10 brls.

Trinidad, 1 kg.

Sulphur—

Ceara,	2 t.	10 c.
Vera Cruz,	2	
Salaverry,	17	14
Boston,	175	
Trinidad,	3	15
Demerara,	2	
Nantes,	100	4
Bordeaux,	10	13
Genoa,	21	19

Sulphuric Acid—

St. John's, Nfld.,	1 t.	4 c.
Penang,	1	2
Antofagasta,	13	1
Porto Alegre,	19	

Superphosphate—

Gd. Canary,	10 t.
Las Palmas,	10
Valencia,	50

Tartaric Acid—

Vigo, 2 c.

Treacle—

Antwerp, 1 kg.	105 brls.	80 lb.
Bremen,	5	
Bremerhaven,	5	
E. London,	10 cs.	
Ghent,	25	
Gothenburg,	275	100 cks.
Hamburg,	25	
Rotterdam,	57	10
Terneuzen,	10	10

Varnish—

Barcelona,	2 cs.
Bombay,	1
Constantinople,	1
Halifax,	4
Iquique,	12
Lisbon,	4
New York,	15 cks.
Portland,	10
Rotterdam,	18
Valparaiso,	3
Vigo,	1

Vermilion—

Tampico, 2 cs.

White Lead—

Para, 15 t.

Whiting—

Talcahuano, 20 brls.

Zinc Chlorate—

Oporto, 4 t. 11 c. 14

Bombay, 3

Zinc Chloride—

Boston, 2 t. 13 c.

Bombay, 14

Zinc Crystals—

Antwerp, 17 c.

Zinc White—

Rouen, 20 cks.

MANCHESTER

Week ending March 21st.

Alum—

Valencia, 19 cks.

Aniline Colours—

Hamburg, 2 kgs.

Aniline Oil—

Antwerp, 1 dm. 1 dm.

Aniline Salts—

Antwerp, 3 pms.

Rio de Janeiro, 4 cs.

Benzol—

Trepot, 25 cks.

Caoutchouc—

Barcelona, 2 cs.

Carbolic Acid—

Trepot, 306 brls. 14 cks.

Caustic Soda—

Barcelona, 17 dms. 10 cks.

Malaga, 25 brls.

Pitch—

Antwerp, 48 t.

Trepot, 17

Potassium Bichromate—

Rio de Janeiro, 1 cs.

Soap—

Hamburg, 2 pms.

Porto Alegre, 13 cs.

Soda Ash—

Trepot, 100 lbs.

Sulphite—	
100 kgs.	
Sulphate—	
21 cks.	
Id—	
19 cs.	
6 cks.	
50 brls.	
18 dms.	
63 cks.	
ULL.	
ing March 16th.	
Sulphate—	
1,972 bgs.	
384	
9 dms.	
owder—	
87 cks.	
1 ck.	
240 dms. 4 cks.	
therwise undescribed)	
4 cs	
10 pkgs.	
8 10 13 cks.	
bs.	
13 8	
111 7 23	
28	
40 3	
31	
Oil—	
1,070 c.	
403	
35	
75	
20	
3,641	
1,659	
therwise undescribed)	
1 ck.	
20 bgs.	
5	
10 1 cs.	
4	
128 c.	
21	
675	
338	
132	
105	
35	
1 cs.	
ite—	
200 bgs.	
306 bgs.	
2 cks.	
19 cks.	
colours—	
2 cks. 15 pkgs.	
59 42	
1 212	
22 1 cs.	
1	
4 1	
6	
17 1 2 dms.	
5	
107 pkgs.	
10 cs.	
188 t.	
2 cs.	
1 cs.	
5 cks.	
55	

Tar—	
Antwerp, 6 cks.	
Bremen, 1	
Christiansund, 5	
Copenhagen, 15	
Liban, 3	
Rotterdam, 3	
Treacle—	
Drontheim, 6 cks.	
Stavanger, 3	
Varnish—	
Amsterdam, 1 ck.	
Antwerp, 5 6 cs. 24 dms.	
Bremen, 3	
Copenhagen, 3 pks.	
Ghent, 8 5	
Hamburg, 1	

GLASGOW.

Week ending March 21st.

Alumina Sulphate—	
Melbourne, 8 t. 11½ c.	
Ammonium Chloride—	
Genoa, 3 t. 8½ c.	
Ammonium Sulphate—	
Demerara, 79 t. 10 c.	
Trinidad, 32 15½	
Bleaching Powder—	
Adelaide, 1 t. 3¼ c.	
Melbourne, 6 19½	£270
Bombay,	
Castor Oil—	
Adelaide, 362 glns.	£64
Santos, 2 t. 18¾ c.	
Singapore,	
Coal Products—	
Pitch	
Hamburg, 314 t.	£100
Baltimore, 203	
Antwerp, 145 11¼ c.	
Gothenburg, 218 8	£175
Oporto, 218 8	
U.S.A., 218 8	
Tar	£148
Bombay,	
Coal Tar Products (otherwise un-	
described)—	
Rotterdam, 8 t.	
Cod Oil—	
Adelaide, 449	
Copperas—	
Bombay, 4114	
Dyestuffs—	
Extracts	
Melbourne, 1 t. 2¾ c.	
Logwood	
Canada, 41 t. 17 c.	£96. 10s.
Oporto, 41 t. 17 c.	
Patent Indigo	
Melbourne, 1 t. 3¼ c.	
Farina—	
Bombay, 10 t.	
Glucose—	
Cape Town, 8 t. 2 c.	
Iodine—	
Rotterdam, 41, 140	
Lead Acetate—	
Bombay, 9 t. 5¾ c.	
Linseed Oil—	
Adelaide, 4236	
Cape Town, 1 t. 6½ c.	
Melbourne, 20	
Rangoon, 3 ¾	
Collingwood, 5 16½	
Singapore, 1 16	
Magnesium Sulphate—	
Adelaide, 3 t. 17¼ c.	
Bombay, 6 14	
Paris, 5	
Manganese—	
Basle, 11 t. 16½ c.	
Manure—	
Trinidad, 106 t. 10¾ c.	£210
U.S.A., 106 t. 10¾ c.	
Paint—	
Adelaide, 7 t. 3½ c.	£34
Cape Town, 3 13¼	
Melbourne, 82	
Hong Kong, 43	
Iquique, 43	
Painters' Colours—	
Adelaide, 4188	
Demerara, 30	
Singapore, 27	
Yokohama, 103	
Paraffin Wax—	
Antwerp, 2 t. ¾ c.	
Bombay, 3. 6	

Hiogo, 18 19	
Leghorn, 1 1¾	
Trieste, 10 1¾	
Venice, 7 9	
Potassium Bichromate—	
Rotterdam, 36 t. 3 c.	£394
Genoa, 4 18½	
Ghent, 10 13¾	
Lyons, 1 9¾	
Naples, 3 9¾	
Venice, 3 9¾	

Rosin Oil—	
Amsterdam, 52	

Soap—	
Bombay, 5 t. 4½ c.	
Canada, 5 t. 14¾	
Grenada, 5 t. 14¾	
U.S.A., 1	

Sodium Bichromate—	
Genoa, 28 t. 10½ c.	
Leghorn, 12½	
Oporto, 1	

Sodium Sulphate—	
Gothenburg, 5 t. 1¾ c.	

Sulphuric Acid—	
Rangoon, 48 t. 17¾ c.	

Treacle—	
Bergen, 15 t.	
Gothenburg, 4 10¾ c.	

White Lead—	
Canada, 1 t. 7¾ c.	
Cape Town, 5 12½	
Melbourne, 12	
Antwerp, 1 2	

TYNE.

Week ending March 16th.

Alkali—	
Antwerp, 15 t.	
Christiania, 8 5 c.	
Rotterdam, 3 4	
Trieste, 7 18	
Esbjerg, 10	
New York, 260 11	

Alum Waste—	
New York, 12 t.	

Ammonia—	
Pomaron, 7 c.	

Antimony—	
Hamburg, 1 t. 10 c.	

Arsenic—	
Antwerp, 1 bx. 1 t. 5 c.	
Rouen, 5 7	

Barytes—	
Hamburg, 5 t.	
Rouen, 25	

Bleaching Powder—	
Lisbon, 10 t. 4 c.	
Naples, 2 8	
Hamburg, 12 12	
Antwerp, 127 15	
Barcelona, 3 2	
Christiania, 10 3	
Rotterdam, 8 12	
Trondhjem, 10	
New York, 50 12	
Gothenburg, 65 3	

Caustic Soda—	
Naples, 91 t. 3 c.	
Hamburg, 13 1	
Antwerp, 5 14	
Barcelona, 64 8	
Christiania, 10 3	
Rotterdam, 1 13	
Trieste, 39 3	
New York, 56 1	
Gothenburg, 39 13	

Chemicals (otherwise undes.)—	
Pomaron, 4 c.	

Colours—	
Rotterdam, 2 c.	

Fluorspar—	
New York, 11 t. 18 c.	

Hydrochloric Acid—	
Pomaron, 11 c.	

Lamp Black—	
Rotterdam, 11 c.	

Litharge—	
Rotterdam, 11 c.	
Rouen, 5 t. 2	
New York, 2 10	
Gothenburg, 16	

Magnesia—	
Hamburg, 16 c.	
Genoa, 13 t. 14	
Rouen, 1 2	

Manure—	
Naples, 130 t.	
Valencia, 446	

Naphtha—	
Pomaron, 11 t. 14 c.	

Naphthaline—	
Hamburg, 10 t.	

Nitric Acid—	
Pomaron, 5 c.	

Ochre—	
Christiania, 8 t. 5 c.	

Paint—	
Antwerp, 5 c.	
New York, 13 t. 10	

Phosphorus—	
Barcelona, 1 t. 7 c.	
Valencia, 4 2	

Salammoniac—	
Gothenburg, 1 t. 3 c.	

Sheep Dip—	
Christiania, ¾ c.	

Soap—	
Rotterdam, 10 t. 5 c.	

Soda—	
Naples, 6 t. 14 c.	
Rotterdam, 42 4	
Smyrna, 32	
Svendborg, 25 13	
Lisbon, 5 5	
Gothenburg, 10 2	

Soda Ash—	
Lisbon, 54 t. 19 c.	
Christiania, 3 17	
Trieste, 16 16	
Smyrna, 5 3	
Esbjerg, 13	

Sodium Hyposulphite—	
New York, 20 t. 3 c.	

Sulphur—	
Gothenburg, 10 t.	

Superphosphate—	
Genoa, 70 t.	

Varnish—	
Pomaron, 1 c.	

White Lead—	
Lisbon, 10 t. 1 c.	
Naples, 1 1	
Christiania, 1 12	
New York, 5 12	
Gothenburg, 12	

GOOLE.

Week ending March 13th.

Benzol—	
Rotterdam, 23 dms.	

Chemicals (otherwise undescribed)	
Dunkirk, 26 cks.	
Ghent, 2	
Rotterdam, 31	

Coal Products (otherwise undes.)—	
Boulogne, 4 cs. 12 cks.	
Ghent, 1 3	
Hamburg, 1 10	
Rotterdam, 71	

Dyestuffs (otherwise undescribed)	
Ghent, 2 cks.	

Manure—	
Boulogne, 191 bgs.	
Dunkirk, 185	
Ostend, 622	

Painters' Colours—	
Calais, 1 cs.	
Ghent, 3 cks. 2 dms.	
Hamburg, 1 ck. 1 cs.	
Rotterdam, 2 2	
Dunkirk, 1	

Pitch—	
Antwerp, 1,009 t.	

GRIMSBY.

Week ending March 16th.

Caoutchouc—	
Esbjerg, 1 cs. 3 bls.	

Chemicals (otherwise undescribed)	
Dieppe, 1 ck. 1 cs.	
Hamburg, 13 13 14 pkgs.	

Coal Products (otherwise undes.)—	
Dieppe, 140 cks.	

Painters' Colours—	
Antwerp, 1 cs.	
Hamburg, 1	
Rotterdam, 2 cks 6 dms.	

Pitch—	
Antwerp, 70 t.	

PRICES CURRENT.

WEDNESDAY, MARCH 27th, 1890

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

Acids:—

	£	s.	d.
Acetic, 25% and 40%	per cwt.	6/6	9/9
Glacial	"	40/-	
Arsenic S.G., 2000	"	0	15 0
Fluoric	per lb.	0	0 3 1/4
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0 10
(Cylinder), 30° Tw.	"	0	3 0
Nitric 80° Tw.	per lb.	0	0 1 3/4
Nitrous	"	0	0 1 1/4
Oxalic	nett	0	0 3 1/4
Phosphoric, 1750°	"	0	0 11
Picric	"	0	0 10
Sulphuric (fuming 50%)	per ton	15	10 0
(monohydrate)	"	5	10 0
(Pyrites, 168°)	"	3	0 0
" 150°	"	1	5 0
(free from arsenic, 145°)	"	1	6 0
Sulphurous (solution) S.G. 1025	"	3	0 0
Tannic (pure)	per lb.	0	1 0
Tartaric	"	0	0 10 3/4
Arsenic, white powdered	nett	per ton	14 15 0
Alum (loose lump)	"	4	15 0
Alumina Sulphate (pure)	"	4	12 6
Aluminoferrous	"	2	7 6
Aluminium	per lb.	0	3 0
Ammonia, Anhydrous	"	0	1 3
" 380=28° B.	per lb.	0	0 3
" =24° B.	"	0	0 2 1/4
" Carbonate	nett	0	0 3 1/4
" Muriate	per ton	22	10 0
" (sal-ammoniac) 1st & 2nd	per cwt.	39/-	37/-
" Nitrate	per ton	40	0 0
" Phosphate	per lb.	0	0 9 1/2
" Sulphate (grey) London	per ton	10	15 0
" (grey) Hull	"	10	15 0
Aniline Oil (pure)	per lb.	0	0 5 1/4
Aniline Salt	"	0	0 4 1/4
Antimony	per ton	31	15 0
" (tartar emetic)	per lb.	0	0 7 1/2
" (golden sulphide)	"	0	0 10
Barium Chloride	per ton	6	10 0
" Carbonate (native)	"	3	5 0
" Sulphate (native levigated)	"	45/-	to 75/-
Bleaching Powder, 35%	nett	7	0 0
" Liqueur, 7%	"	3	10 0
Bisulphide of Carbon	"	11	0 0
Camphor Acetate (crystal)	per lb.	0	0 6
Calcium Chloride	per ton	2	2 6
China Clay (at Runcorn) in bulk	"	15/-	to 30/-

Coal Tar Products and Dyes:—

Aluminate (artificial) 20%	net	per lb.	0	0	8
Magnesia	"	"	0	3	9
Antimony, 30% A, f.o.b. London	per unit	per cwt.	0	1	1
Benzol, 90% nominal	per gallon	0	1	1	1/2
" 50/50	"	0	1	1	1
Carbolic Acid (crystallised 40")	per lb.	0	0	5	1/2
" (crude 60")	per gallon	0	1	6	1/2
Cresote (ordinary)	"	0	0	2	
" (Altered for Lucigen light)	"	0	0	2	
Crude Naphtha 30% @ 120° C.	"	0	0	5	
Creosote Oil, 22° Tw.	per ton	2	10	0	
Pitch, f.o.b. Liverpool or Garston	"	1	13	0	
Solvent Naphtha, 90% at 160°	per gallon	0	1	2	
Lucigen and Wells Oils	"	0	0	2	1/2
Copper	per ton	39	2	6	
" Sulphate	"	15	5	0	
" Oxide (copper scales)	"	39	0	0	
Glycerine (crude)	"	16	10	0	
" (distilled S.G. 1250°)	"	45	0	0	
Iodine	nett, per oz.	0	0	9	
Iron Sulphate (copperas)	per ton	1	5	0	
" Sulphide (antimony slag)	"	2	0	0	
Lead (sheet) for cash	"	11	5	0	
" Litharge Flake (ex ship)	"	13	5	0	
" Acetate (white)	"	24	10	0	
" brown	"	14	10	0	
" Carbonate (white lead) pure	"	16	0	0	
" Nitrate	"	18	15	0	

Lime, Acetate (brown)	..	..	..	per ton	5 12
" (grey)	..	..	..	"	8 10
Magnesium (ribbon and wire)	..	..	..	per oz.	0 2
" Chloride (ex ship)	..	..	..	per ton	2 10
" Carbonate	..	..	..	per cwt.	1 17
" Hydrate	..	..	..	per ton.	17 0
" Sulphate (Epsom Salts)	..	..	..	per ton	3 0
Manganese, Sulphate	..	..	..	"	17 0
" Borate	..	..	..	per cwt.	2 15
" Ore, 70 %	..	..	..	per ton	4 5
Methylated Spirit, 61° O.P.	..	..	..	per gallon	0 1
Naphtha (Wood), Solvent	..	..	..	"	0
" Miscible, 60° O.P.	..	..	..	"	0
Oils:—					
Cotton-seed	..	..	..	per ton	17 10
Linseed	..	..	..	"	21 0
Petroleum, American	..	..	..	per gallon	0 0
Stearine	..	..	..	per ton	25 10
Phosphorus (yellow)	..	..	..	per lb.	0 2
" (red)	..	..	..	"	0 2
Potassium (metal)	..	..	..	per oz.	0 3
" Bichromate	..	..	..	per lb.	0 0
" Carbonate, 90% (ex ship)	..	..	..	per ton	16 15
" Chlorate	..	..	..	per lb.	0 0
" Cyanide, 98%	..	..	..	"	0 1
" Hydrate (Caustic Potash) 80/85 %	..	..	..	per ton	21 5
" (Caustic Potash) 75/80 %	..	..	..	"	19 15
" (Caustic Potash) 70/75 %	..	..	..	"	19 10
" Nitrate (refined)	..	..	..	per cwt.	1 3
" Permanganate	..	..	..	per cwt.	2 17
" Prussiate Yellow	..	..	..	per lb.	0 0
" Sulphate, 90 % (ex ship)	..	..	..	per ton	9 15
" Muriate, 80 % (do.)	..	..	..	"	8 10
Silver (metal)	..	..	..	per oz.	0 2
" Nitrate	..	..	..	"	0 2
Sodium (metal)	..	..	..	per lb.	0 2
" Carb. (refined Soda-ash) 48 %	..	..	..	per ton	4 15
" (Caustic Soda-ash) 48 %	..	..	..	"	4 0
" (Carb. Soda-ash) 48 %	..	..	..	"	4 0
" (Alkali) 58 %	..	..	..	"	3 10
" (Soda Crystals)	..	..	..	"	2 2
" Acetate (ex-ship)	..	..	..	"	14 0
" Arseniate, 45 %	..	..	..	"	11 0
" Chlorate	..	..	..	per lb.	0 0
" Borate (Borax)	..	..	..	net, per ton.	18 0
" Bichromate	..	..	..	per lb.	0 0
" Hydrate (77 % Caustic Soda) (f.o.b.)	..	..	..	net pr. ton	9 15
" (74 % Caustic Soda)	..	..	..	"	8 10
" (70 % Caustic Soda)	..	..	..	"	7 10
" (60 % Caustic Soda)	..	..	..	"	6 10
" (60 % Caustic Soda, cream) (f.o.b.)	..	..	..	"	6 7
" Bicarbonate	..	..	..	"	6 10
" Hyposulphite	..	..	..	"	5 10
" Manganate, 30%	..	..	..	"	16 0
" Nitrate (95 %) ex-ship Liverpool	..	..	..	per cwt.	0 5
" Nitrite, 98 %	..	..	..	per ton	29 0
" Phosphate	..	..	..	"	15 0
" Silicate (glass)	..	..	..	per ton	4 10
" (liquid, 100° Tw.)	..	..	..	"	3 10
" Stannate, 40 %	..	..	..	per cwt.	3 2
" Sulphate (Salt-cake)	..	..	..	per ton.	0 17
" (Glauber's Salts)	..	..	..	"	1 5
" Sulphide	..	..	..	"	8 0
" Sulphite	..	..	..	"	5 3
Strontium Hydrate, 100%	..	..	..	"	8 10
Sulphocyanide Ammonium, 95 %	..	..	..	per lb.	0 0
" Barium, 95 %	..	..	..	"	0 0
" Potassium	..	..	..	"	0 0
Sulphur (Flowers)	..	..	..	per ton.	6 5
" (Roll Brimstone)	..	..	..	"	5 5
" Brimstone : Best Quality	..	..	..	"	3 12
Superphosphate of Lime (26%)	..	..	..	"	2 7
Tallow	..	..	..	"	23 10
Tin Crystals	..	..	..	per lb.	0 0
" English Ingots	..	..	..	per ton	64 0
Zinc (Spelter)	..	..	..	"	13 15
" Chloride (solution, 100° Tw.)	..	..	..	"	5 7

THE CHEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

411.

SATURDAY, APRIL 6, 1895.

Vol. XVI.

Contents.

PAGE	PAGE
Infringement of Trade Titles.. 221	Tips for Traders..... 226
Hydrogen Cylinder Explosion..... 222	Trade Notes..... 227
Refined Petroleum from U.S.A. 222	Tar and Ammonia Products..... 228
Improved Form of Ozonising..... 225	Miscellaneous Chemical Market..... 228
Shelf..... 222	Report on Manure Material..... 228
Partial Oxidation of Terpenes..... 223	The Metal Market..... 228
Essential Oils..... 224	Liverpool Mineral Market..... 228
Starry Jottings..... 225	Tyne Chemical Report..... 228
Alkali and Bleach..... 225	Hull Paint, Oil, and Colour Report..... 229
of Margarine and Inspection..... 225	Liverpool Oil and Colour Market..... 229
Imports..... 225	West of Scotland Chemicals..... 229
Exports..... 226	Gazette Notices..... 229
Correspondence..... 226	The Patent List..... 229
	Imports..... 230
	Exports..... 232
	Prices Current..... 236

ADVERTISEMENTS.

O MARGARINE.—Wanted a Competent MANAGER to erect Plant and start Works. Correspondence treated as private.—Address, "OLEO," c/o Deacon's Advertising Offices, 154, Leadenhall-street, London, E.C.

ANTED, for Nitro-Glycerine Works, on East Coast of Ireland, a CHEMIST who has been accustomed to the Manufacture of Nitro-Glycerine.—Apply, stating qualifications and salary required, to LYNCK AND COMPANY, Ltd., Lion Ammunition Works, Witton, Birmingham.

Notices.

Communications for the *Chemical Trade Journal* should be sent to the Editor, and Cheques and Post Office Orders made payable to—

DAVIS BROS., 32, Blackfriars Street, MANCHESTER.

Our Registered Telegraphic Address is—

"Expert, Manchester."

Terms of Subscription, commencing at any date, to the *Chemical Trade Journal*,—payable in advance,—including postage and cartage of the world, are as follows:—

Early (52 numbers) 12s. 6d.

Half-Yearly (26 numbers) 6s. 6d.

Quarterly (13 numbers) 3s. 6d.

Subscribers will oblige by making their remittances for subscriptions by Post Office Order, crossed and payable to "Davis Bros."

Communications for the Editor, if intended for insertion in the next week's issue, should reach the office not later than **Tuesday** evening.

Advertisements.

Advertisements of Situations Vacant, Premises on Sale or To be Let, and Specific Articles for Sale by Private Contract are charged on the *Chemical Trade Journal* at the following rates:—

30 Words and under..... 2s. 6d. per insertion

Each additional 10 words 6d. "

Advertisements, Announcements in the Directory Columns, and all Advertisements not prepaid, are charged at the Tariff rates, which will be forwarded on request.

Advertisements intended for insertion in the current week's issue should reach the office by **Wednesday morning** at the latest.

THE INFRINGEMENT OF TRADE TITLES.

AN important, though fine point of law has been argued this week at the Manchester sittings of the Lancashire Court of Chancery, and the decision of Vice-Chancellor Robinson is of considerable interest, as it will doubtless form a precedent for the settlement of similar cases in the future.

The action arose out of a dispute between two chemical manufacturers, the plaintiffs, the East Lancashire Chemical Company, seeking an injunction to restrain the defendants, Thomas Worth and H. Jones, from trading as the South-East Lancashire Chemical Company, or any other colourable imitation of the plaintiffs' trade name.

It appears that Jones was, up to the end of December, 1893, a foreman in the employ of the plaintiffs, and he left to join Worth in partnership, Worth having up to that time traded as an indiarubber manufacturer and whilom chemical manufacturer. Upon going into partnership, however, Worth decided to sever the two businesses and start as a chemical manufacturer in Edge-lane, Droylsden, the plaintiffs' works also being situate in Edge-lane.

The defendants admitted that under the title of the East Lancashire Chemical Company the plaintiffs had earned a wide reputation, but contended that they had no intention or thought of clashing with the plaintiffs by trading as the South-East Lancashire Chemical Company, for they had offered to state on their bill heads and circulars that they had no connection with the plaintiffs' company. They also totally denied the charge that Jones had disclosed information about the plaintiffs' customers.

The point was then raised as to whether the plaintiffs had ground for action, because the defendants had only put up a signboard, and never started actual business; counsel contending that as the plaintiffs had issued their writ in full knowledge of these facts the action was vexatious, and should be dismissed.

On the other hand the counsel for the plaintiffs submitted that the proposals of the defendants only afforded imperfect protection. If they had waited till the business had been actually commenced, on bringing their action they would have been told by the Court that they had come too late. The charge against Jones had been dropped, and so under the circumstances counsel claimed an injunction with costs.

The Vice-Chancellor's judgment was very emphatic. He decided to tax the costs separately, and said the most he could do with regard to the charge against Jones was to dismiss that part of the case with costs for the defendants, giving, however, the plaintiffs the costs of their affidavits except in regard to the filing of the same. Touching the costs of the rest of the case he found for the plaintiffs.

Upon the objections raised against the soundness of the plaintiffs' ground for action, he entirely disagreed with the defendants' counsel. As to the powers of the Court being

limited by such restrictions as defendants' counsel wished to raise, he could not admit any such limitations. On the contrary, it was his opinion that if a case was found in which there was clearly evidence of even only an intention to use the name of a firm that had been carrying on business, or a colourable imitation of the same, the Court without doubt had the right to grant an injunction before any actual business had been transacted. Judgment was given accordingly.

THE OXYGEN CYLINDER EXPLOSION INQUIRY.

THE adjourned hearing of this inquiry was resumed on Wednesday, March 27th, but owing to pressure on our space it was impossible to include the report in our last issue. Messrs. Newton and Co. were represented by Messrs. Greenwood and Bower; Mr. Geoghegan and Mr. Mackay appeared for Dr. Kennedy and the widow; Mr. Pocock and Mr. McCall were for Messrs. Clarkson and Co.; the Great Eastern Railway Company were represented by Mr. R. M. Nettleship and Mr. Drury, assistant superintendent of the line.

Frederick Back, a boy of 16, stated that on Friday, the 8th ult., he was engaged by the Rev. Mr. Shaw, of Plaistow, to get a cylinder at Messrs. Newton and Co.'s, Fleet-street, E.C. On his returning he was asked by a ticket-inspector at Fenchurch-street Station, "What he had got there," meaning the cylinder. Witness told him that it was a cylinder, that it was charged with gas, and that he was going to take it to Mr. Shaw's house. The inspector further asked him what he thought would happen if the cylinder exploded, and he replied, "It would blow me to pieces." The inspector then said he could not go by rail, and witness subsequently rode home by tramcar. Messrs. Newton had told him to be careful not to drop the cylinder.

Herbert Charles Newton, scientific instrument maker, 3, Fleet-street, said he was in the habit of receiving cylinders to be filled with oxygen gas, the work being performed by Messrs. Clarkson, who usually sent to the shop for the cylinders. After a cylinder had been filled it was returned by Messrs. Clarkson and placed in the basement until the customer called for it. They had used hundreds—probably thousands—of cylinders, and he had only known of one previous accident with them, when one of their workmen was injured through putting the coal-gas gauge into the oxygen cylinder by mistake. The cylinders were tested up to 230 atmospheres, equivalent to 3,450 lb., which was about double the amount the cylinders were intended to be filled up to. The cylinders would probably stand double that pressure before bursting. After the accident with a cylinder which occurred at Bradford, a number of cylinders were filled with gas and thrown down a stone staircase without their bursting, and they had also been thrown on to flagstones with a similar result. He was not aware of any conditions attaching to passengers taking cylinders with them in a train. He should say hundreds of cylinders were taken by train every week. When a cylinder was sent to a customer it would be carried to the station by a boy.

Thomas Abbott, chemical gas manufacturer, in the employ of Messrs. Clarkson and Co., said that on the 14th ult. he received at their works a cylinder from Messrs. Newton. It arrived there in a van. His orders were to fill all Messrs. Newton's cylinders with oxygen gas at 120 atmospheres. He had never made a mistake in putting the wrong gas in, but some time ago he met with an accident in testing a cylinder. On that occasion the neck of the cylinder flew off and hit him on the nose. He did not think it would be possible to over-charge a cylinder unless he left the work, which he was strictly enjoined not to do.

The Rev. Richard Hartley O'Reilly, 34, East-road, West Ham, said he was interested in magic lantern exhibitions, and often gave them at Plaistow. He had frequently passed through the barrier at Fenchurch-street Station carrying a cylinder, which was sometimes quite bare and sometimes covered with a piece of paper; but with the valve exposed, and had never been challenged by the railway authorities.

Annie Smith, of the Nurses' Home, Plaistow, said she remembered in December last carrying a cylinder through the barrier at the station. It was uncovered, but the ticket-collector made no remark about it.

Thomas Furney, a Scripture reader, gave similar evidence.

Mr. Kenneth Murray, manager and engineer to the Brin's Oxygen Company, Limited, said the firm he represented did a large business in supplying compressed oxygen, and he had gone into the question of what was the best form of cylinder to contain it. In his opinion it was one made of mild steel, the steel to contain not more than 25 per cent. of carbon thoroughly annealed. He had examined the cylinder carried by the deceased, and with the exception of the valve being broken it was absolutely intact. He thought it probable that Holbrook would

not have been injured if he had been two or three yards off, explosion was of a purely local character. In the winter season filled 2,000 or 3,000 cylinders with oxygen, and sent them all a country. He considered that the explosion was due to mixed gas some form or another being in the cylinder. He considered it properly tested and annealed, and when sufficient precaution employed in filling, to be absolutely safe for carriage and ordinary conditions.

The inquiry was then adjourned to allow Dr. Dupré to attend expert witness.

On Thursday, 4th inst., the inquiry was again re-opened. An official report of Dr. Dupré was read by the Coroner. A of accidental death was returned, the jury adding an important Details will appear in the next issue.

EXPORTS OF PETROLEUM FROM U.S.

THE Chief of the Bureau of Statistics, Washington, gives following returns of the exports of petroleum and petroleum products for February. The total shipments were 60,639,199 compared with 55,803,469 gallons in February, 1894. The eight months ending February 28, 1895, was 611,200,474 against 612,786,614 gallons during the same period in 1894. Details of the shipments are as follow:—

CRUDE PETROLEUM.		Gallons.
Total, February, 1895	.....	6,605,968
" " 1894	.....	4,058,120
NAPHTHAS.		
Total, February, 1895	.....	39,608
" " 1894	.....	2,099,517
ILLUMINATING.		
Total, February, 1895	.....	51,097,589
" " 1894	.....	46,395,706
LUBRICATING AND PARAFFIN.		
Total, February, 1895	.....	2,895,275
" " 1894	.....	3,245,394
RESIDUUM.		
Total, February, 1895	.....	758
" " 1894	.....	672

AN IMPROVED FORM OF OZONISING APPARATUS.

[By H. N. WARREN.]

THE apparatus hitherto so much in use, and devised by S. consists, in its simplest form, of two tubes, the one smaller in dimension than the other that when placed inside it space is left between the two. The inside of the inner tube, outside of the outer tube, are coated with tinfoil, and are respectively to the poles of an induction coil. From careful discharges, it appears that the silent discharge produces over 50 per cent more ozone than does the disruptive discharge; whereas disruptive discharge is never wholly obtained when using any of the forms of apparatus. The apparatus which the author has pleasure of introducing consists of two or more tubes of ordinary about three feet long, and half an inch in diameter, connected by the aid of corks and smaller tubing. The interior of each has attached to its surface small squares of tinfoil, chemical paper, and arranged in close proximity to each other in a fashion, similarly to what is known as the diamond Leyden jar, the extremities of the tubes being furnished with tubulars to a stream of gas to be directed through the interior of the apparatus. The last squares of tinfoil in the first tube are connected to the second by strips of foil passing from the interior of the one tube to the interior of the other, thus rendering the whole apparatus, as a surface is concerned, one continuous length. At the same time exterior squares of foil are connected to the poles of a powerful induction coil of special construction. The action of the apparatus is observed by transmitting a current of air. The gas thus evolved is a most oppressive odour. When perfectly pure oxygen used there was a contraction of volume, amounting in several cases one-eighth of the original bulk; whereas, in former experiments, twelfth has been about the usual amount observed. The odour case resembled that of chlorine, and instantly corroded in fumes many other such like organic substances; a strong solution of it was at once rendered colourless, many mineral and other substances perfectly bleached. Experiments are now being performed upon bleaching of pepper, etc. The length of spark from the air employed amounted to six inches in length, and was of high intensity.

Our Book Shelf.

's MECHANICS' ALMANACK. Manchester: John Heywood, 4d.

miliar almanack, which is now in its twenty-second year of n, contains all the features which have characterised it in the onjunction with one or two articles of greater length than The more important items are articles on The Strength of rtland Cement, the Tensile Strength of Cements, and Timber. The latter are above the average, but the Tests are rather antiquated and crude. There is a brief referencet escent Gas Burners, but otherwise the almanack does not, erially from former issues.

TARY PRACTICAL CHEMISTRY. By J. T. Hewitt and F. G. 42 pp. London: Whittaker and Co. 9d.

chure constitutes yet another guide to the Science and Art nt Practical Examination in Chemistry. It possesses, how listinctive and advantageous feature in covering both the and Organic courses. The little book is well arranged and eing got up in a neat and handy form. It does not differ in e from similar works of the same nature, being suggestive in features of one or two well known works on Qualitative

Being designed solely for the elementary stage, it is con- use NH_4Cl , NH_4HO and $(\text{NH}_4)_2\text{S}$ as precipitating agents III., in which aluminium only is required by the syllabus, ganese, nickel and cobalt all being omitted in the elementary ur charge of confusion on this ground is substantiated by d explanation in Table D, to the effect that NH_4HO is the gent, so as to avoid confusion by the precipitation of a trace of r lead which may have escaped separation, both of which ons might have been avoided. The method of expressing ver which the authors presumably apprehend criticism, are factory, and on account of the specimens of how the writing dits should be done in the elementary stage, the work deserves mmedation.

L MANUFACTURERS' DIRECTORY. 103 pp. London: a, Marshall, Hamilton, and Kent. 1895. 2s. 6d.

rectory is very useful as far as it goes. It does not profess to branches of the chemical trade, and is, therefore, far from nsive. It will be found, however, a handy guide and source ice in connection with the heavy chemical trade. There is improvement in the list of brokers and agents in London, eedes the directory proper. There is a welcome improvement sified list of chemicals, under which the makers of various are given. Many unaccountable typographical errors and , however, occur. For a cheap directory it would be hard but it is unfortunate that a work which might be of great uld be so crippled by minor deficiencies.

HES ON THE ARSENATES, PHOSPHATES, AND MODIFICA- OF PHOSPHORIC ACID. By Thomas Graham (1833). ed 1895. 46 pp. Edinburgh: W. F. Clay, 1895. 1s. 6d.

be tenth of these now familiar Alembic Club reprints, deals ith the classic researches of Thomas Graham, to whom the stion of the basicity of the acids is undoubtedly due, apart lemonstration of the connection of ortho- pyro- and meta- c acids and their salts with each other. The old notation is curiously interesting, being based upon the dual system y Berzelius.

print will be found very readable, and throws much light early history of these interesting salts. It is got up in the and uniform style which characterises the series.

L LABORATORY LABELS, PART II. Compiled by W. H. ls. London: A. Gallenkamp & Co. 1894.

mpilation of labels differs from the customary type in some The labels are clearly and neatly printed, the formulæ en and also the molecular weights. Several labels for the tance are given, so that the solid is provided for and also the hen used as a reagent, a desirable strength being added er case. The tables are specially compiled to meet the nts of the Science and Art Department. A number of blank provided, as well as a good number of "normals," "dec- etc. There are no distinctive "pure" and "commercial" wever. Altogether the list comprises 750 labels, in addition to son table for Fahrenheit and Centigrade thermometers, Lothar rangement of the elements, and a table of atomic weights to 1894.

RECHERCHES DE CHIMIE ET DE PHYSIOLOGIE APPLIQUEES A L' AGRICULTURE. By A. Petermann. Vol. II. 456 pp. Seven lithographic plates. Brussels: Mayolez and Audiarte 1894.

This interesting collection of researches results from the work of the State Experimental Station at Gembloux. We have previously testified to the value of Dr. Petermann's labours in agricultural chemistry, and this second volume contains a great amount of useful information. It is divided into four parts. Part I. deals with the effect of potassic manures on beetroots and beetroot cultivation generally, researches upon the composition of the atmosphere, and the assimilation of nitrogen. Part II. contains analyses of a number of fertilizing waste products, such as from gelatine and sugar manufacture, the composition of spent tan, and the value of peat and woodwool for litter. The third and fourth parts consist of analyses of alimentary materials, notably, certain calf foods and general substances, including alcohols and chicory. The analyses of fertilizers are particularly interesting, there being a good statement of the value of slags and bone meals as fertilizers. The book is one that can strongly be recommended to agriculturists who are acquainted with French.

ELECTROPLATERS' HANDBOOK. By G. E. Bonney. 221 pp. including index. 61 illustrations. 2nd edition. London: Whittaker and Co. 1894. 3s.

The second edition of this useful and practical work will be welcome to all those interested in the trades with which it deals, and particularly by those who have made the acquaintance of the first edition. A chapter on Electrotyping has been added, and will be found very interesting and helpful. All the old features of the original remain, with the addition of several sections on Frosting, Stopping-off Varnishes, and Tables showing Rates of Deposition, which greatly enhance the practical value of the book, and bring it thoroughly up to date. This handbook is essentially practical, and though likely to be useful to the genuine amateur, will be most highly appreciated by practical platers. It contains numerous little hints and suggestions which often give the clue to successful work. The chemistry, though simple, is not too superficial, so that, generally speaking, it may be said to be sound, yet well within the grasp of any intellectual workman. A section devoted to hints upon the maintenance of the health of operatives in this not too healthy occupation is by no means one of the least pleasing paragraphs in the book. As a whole, it is well worthy of recommendation to the trade, and can be safely left to speak for itself when once its acquaintance has been made. The index to the paragraphs as well as the chapters is an excellent idea.

TABLES AND DIRECTIONS FOR QUALITATIVE CHEMICAL ANALYSIS By M. P. Muir. 44 pp. London: Longmans, Green, and Co. 1895. 1s. 6d.

This little work is not intended for very elementary students, and will be found of great assistance to those entering upon the more complex stages of qualitative analysis. It contains many useful hints on that most difficult point, the successful solution of an unknown mixture prior to its analysis. Many and long are the instructions given, but each will occasionally be found of service when a nasty mixture has to be dealt with. The notes throughout the book are good, and, in fact, are one of its best features. In a word, the tabular portions are not such a great success, but the "directions" are excellent. The methods for the solution of an alloy are also good and likely to prove very helpful. The book is rather too full to be suitable for a class-book without explanatory lessons on analysis. Though in most places laboriously minute (three founts of type being used for formulæ to show whether the compounds referred to are liquid, solid, or gaseous), yet we find in the directions for that important test the detection of a phosphate, the student is told to add a "good deal" of molybdate. Previously, quantities have been specified in c.c.'s or by some relation to the bulk of the original solution. There is an excellent wrinkle in the separation of Mg K Na and ammonium, which will be found very useful at the end of a lengthy analysis, and which is unfortunately unknown to a great number of students, being mentioned in but few simple works on qualitative analysis. The book, which is very free from typographical errors and nicely got up, is well worth its cost for this separation alone.

NEW PROCESS OF EXTRACTING GOLD. — According to the *Technical World*, a new process of extracting gold from auriferous ores has been devised by Mr. C. Lørsen. He electrolyzes a solution of bromide of potassium, and thereby obtains an alkaline solution, which contains hypobromite and bromate, which is capable of dissolving gold. The ore is treated with an excess of this solution by rotating cylinders. The solution is then filtered, the gold precipitated by passage over a mixture of iron and coal, and the solution, which now contains bromide of potassium mainly, is once more electrolyzed, and again used for extraction.

THE AERIAL OXIDATION OF TERPENES AND ESSENTIAL OILS.

(Continued from Page 191.)

Apparent formation of Cymene from $C_{10}H_{16}O_2$.

ABOUT 400 c.c. of a concentrated aqueous solution of the body $C_{10}H_{16}O_2$, obtained on oxidising turpentine in the presence of water, was mixed with 100 c.c. of dilute H_2SO_4 containing 30 per cent. of acid; after which the mixture was distilled in a current of steam. At first a considerable amount of a light yellow coloured oil came over, but after some time the yield became very small. The current of steam was then stopped, and the solution was distilled down to about half its original bulk, but without obtaining any further appreciable quantity of oil. The distillation was therefore stopped, and the oil was collected and separated from water.

The yield of oil in one experiment amounted to about 20 per cent. of the body $C_{10}H_{16}O_2$, from which it was obtained.

An analysis of the oil gave the following results:—

0.2452 gram gave 0.7580 gram CO_2 and 0.2050 gram H_2O .

	Per cent.	÷ Atomic weights.	÷ C = 10.
C	84.31	7.026	10.0
H	9.79	9.29	13.22
O	5.90	0.40	0.57

When a solution of $C_{10}H_{16}O_2$ is distilled alone, no trace of any such oil is obtained.

Having prepared about 100 grams of this oil for examination, it was washed thoroughly with water, and then allowed to stand for 15 hours in contact with fused $CaCl_2$, after which it was fractionally distilled. The distillate was collected in six portions—(1) below 175° , (2) $175-190^\circ$, (3) $190-200^\circ$, (4) $200-210^\circ$, (5) $210-220^\circ$, (6) $220-230^\circ$.

The several fractions thus obtained were subsequently refractionated, and the distillate which was collected between $175-185^\circ$ being by far the largest, was again refractionated. The distillate thus obtained was collected in three fractionations—(1) $175-179^\circ$, (2) $172-182^\circ$, (3) $182-185^\circ$; (2) being the largest fraction, was analysed.

0.2319 gram gave 0.7428 gram CO_2 and 0.2010 gram H_2O .

	Per cent.	÷ Atomic weights.	÷ C = 10.
C	87.35	7.23	10.0
H	9.61	9.63	13.23
O	3.04	0.388	0.56

As this oil had the distinguishing smell of cymene, it is most probable that the bulk of it consisted of that substance.

Examination of the Volatile Constituent, $C_{10}H_{14}O$.

When Russian turpentine is oxidised in the presence of water and the aqueous solution is distilled, there collects in the receiver, together with the water, a small quantity of a light yellow coloured oil, which darkens on standing, and has a characteristic smell something like thymol. About 23 grams of this oil were obtained by distilling 25 litres of the fluid. Some of the oil was then analysed without any further treatment beyond careful separation from the water.

I. 0.2278 gram, gave 0.6539 gram CO_2 and 0.1931 gram H_2O .

II. 0.2248 " " 0.6539 " " 0.1899 "

III. 0.2237 " " 0.6487 " " 0.1880 "

	Per cent.	÷ Atomic weight.	÷ C = 10.	Theoretical.
(i) C	78.28	6.523	10.0	80.00
H	9.48	9.48	14.44	9.33
O	12.30	0.752	1.25	10.67
(ii) C	79.33	6.611	10.0	
H	9.33	9.30	14.8	
O	11.25	0.705	1.05	
(iii) C	79.09	6.591	10.0	
H	9.34	9.34	14.17	
O	11.37	0.793	1.10	

The rest of the oil was then transferred to a small flask containing a little fused $CaCl_2$, and allowed to stand overnight; next morning the oil was poured off and fractionated; it commenced to pass over at $180^\circ C$, and the following four fractions were collected:—

(1) $180-185^\circ$; (2) $185-190^\circ$; (3) $190-195^\circ$; (4) $195-205^\circ$.

The residue left in the flask was quite black and thick, like treacle. These different fractions were analysed, but I refrain from publishing the results, as I am of opinion that the fused $CaCl_2$ effected a partial decomposition of the oil. The aqueous solution obtained by shaking up some of the oil with water gives, with bromine water, a light-coloured precipitate. An attempt was made to crystallise some of the oil by means of a freezing mixture, but without success. This body, $C_{10}H_{14}O$, is contained in the aqueous solution as such, and is not derived in any way from the soluble body $C_{10}H_{16}O_2$, for a solution of that substance, when distilled, does not yield any such body.

I now proceed to give a description of some experiments which were made with the object of determining the nature of the oxidation products contained in the oxidised oil.

About 200 grams of oxidised Russian turpentine were placed in a flask, and a current of air was passed, first through some boiling water,

and then through the oxidised oil, which was kept at $100^\circ C$, which the products of distillation were carried through an oil Liebig's condenser. There was thus obtained about 100 grams colourless oil—consisting, probably, in the main of unaltered terpene which was incapable of giving rise to hydrogen peroxide when shaken up with water. After a short time the yield of this portion of distillate gradually slackened, and eventually almost ceased; there then followed a light-yellow coloured oil, the yield in six hours being about 10 grams, whilst the air containing the uncondensed vapours had a irritating effect on the eyes and nose, and a smell somewhat resembling camphor. This yellow coloured oil failed to produce any peroxide of hydrogen, and on analysis gave the following figures:—

	Per cent.	÷ Atomic weights.	÷ C = 10.
C	78.45	6.537	10.0
H	10.54	10.54	16.18
O	11.01	0.688	1.05

The composition, therefore, appears to be $C_{10}H_{14}O$. Now residue left behind when oxidised turpentine is treated at $100^\circ C$, all the volatile matter is driven off, is found no longer to possess power of giving rise to hydrogen peroxide on shaking up with water, and as all the distillates in the last experiment failed to produce peroxide, it appears that the hydrogen peroxide producing body is destroyed at this temperature.

In another experiment a current of air was passed first through drying tubes containing sulphuric acid and caustic potash, and then through a flask containing some oxidised Russian turpentine, which was kept at a temperature of $60^\circ C$. At first, the unaltered terpene distilled over as before, the yield gradually diminishing and finally almost stopping, when a light yellow coloured oil collected in the receiver, followed by a small amount of a darker coloured oil, but the consistency of glycerol. About 10 c.c. of this oil was collected in 12 hours. These two oils were analysed with the following results:

Analysis of light yellow coloured oil:—

0.2964 gram gave 0.8508 gram CO_2 and 0.2802 gram H_2O .

	Per cent.	÷ Atomic weights.	÷ C = 10.
C	78.28	6.523	10.0
H	10.50	10.50	16.1
O	11.22	0.701	1.05

Analysis of the darker coloured oil:—

0.2862 gram gave 0.7558 gram CO_2 and 0.2521 gram H_2O .

	Per cent.	÷ Atomic weights.	÷ C = 10.
C	72.02	6.004	10.0
H	9.79	9.79	16.3
O	18.19	1.237	1.8

The temperature of the oil was then raised to $100^\circ C$, and the distillation was continued, when a mixture of water and a light yellow coloured oil, smelling slightly of cymene, distilled over, the water collected only measured $\frac{1}{4}$ c.c., but no doubt more was absorbed carried away by the previously dried air. An analysis of the oil gave the following figures:—

0.1923 gram gave 0.5486 gram CO_2 and 0.1813 gram H_2O .

	Per cent.	÷ Atomic weights.	÷ C = 10.
C	77.80	6.483	10.0
H	10.47	10.47	16.2
O	11.73	0.733	1.1

The results of these experiments point very strongly to the formation of the two oxides $C_{10}H_{14}O$ and $C_{10}H_{16}O_2$. It was useless to attempt to purify these substances by fractional distillation, partly because there was so little of them, and, further, because the means of distilling under diminished pressure were lacking, whilst they would probably be decomposed if distilled under the ordinary atmospheric pressure. Indeed, the formation of water in the last experiment, raising the temperature to $100^\circ C$, is a proof of the partial decomposition of some one of the oxidation products present in the oxidised turpentine.

An attempt was now made to try and find out what becomes of the H_2O_2 producing body when a current of air is passed through oxidised oil at $60^\circ C$.

The operation was carried on in a similar way to the last experiment, and the H_2O_2 producing powers of the different distillates tested with a negative result. The air, after passing through the condenser, was also led through a wash-bottle containing an aqueous solution of potassium iodide for three hours, but only a trace of iodine was liberated. On testing the residue in the flask, it was found to give some hydrogen peroxide on shaking up with water, but not so much as the original oil. It therefore seems as if the H_2O_2 producing body is partly decomposed at $60^\circ C$, whilst, on continued heating to $100^\circ C$, it is entirely decomposed.

(To be continued).

THARSES SULPHUR AND COPPER COMPANY.—For the year 1914 directors have recommended a distribution of 10 per cent., and £56,000, be written off depreciation, leaving £10,900, to be carried forward.

Parliamentary Notes.

THE IMPORTATION OF MARGARINE.

House of Commons, on Monday, in reply to Mr. Lambert, or of the Exchequer said: The Board of Customs are the Margarine Act, 1887, imposes no duty on their officers importations of margarine marked in the manner designated (i.e., with only a detachable tin or parchment label to denote the contents). Their powers are limited to the provisions under section 8 of the Act.

THE OXYGEN CYLINDER EXPLOSION.

Mr. Newdigate, Mr. Asquith said: I have inquired into and am advised that scientific opinion differs as to whether the explosion of these cylinders is due to the pressure of oxygen upon an old steel tube or to traces of impure substances present. I propose to refer the question for the opinion of two distinguished experts on such matters.

PORTS OF ALKALI AND BLEACH.

Following figures, which are taken from the official foreign and home statistics of the United Kingdom, give the amount of alkali and bleaching materials shipped to the undermentioned ports during the month of February, 1895, as compared with the same month in 1894:—

ALKALI.				
Port.	1894.	1895.	1894.	1895.
	Cwts.	Cwts.	℥	℥
.....	11,272	5,511	4,303	1,729
Norway	6,474	5,174	1,532	975
.....	4,377	3,891	1,606	1,050
.....	10,926	5,386	1,940	1,240
.....	5,226	2,496	2,029	901
Naries	26,062	21,362	12,212	6,891
.....	13,641	17,045	4,470	5,460
.....	257,561	247,040	65,078	54,893
.....	18,367	9,320	6,597	2,859
America ..	3,940	6,894	1,269	1,739
es	71,912	70,641	25,916	21,903
.....	429,758	394,760	126,952	99,640

BLEACHING POWDER, ETC.

Port.	1894.	1895.	1894.	1895.
	Cwts.	Cwts.	℥	℥
.....	52,764	77,362	21,263	26,454
es	24,473	21,084	9,192	7,865
.....	77,237	98,446	30,455	34,319

THE CASE OF MARGARINE AND INSPECTION.

The Committee of the House of Commons which is engaged in inquiry into this matter met again last week, Sir W. Foster presiding.

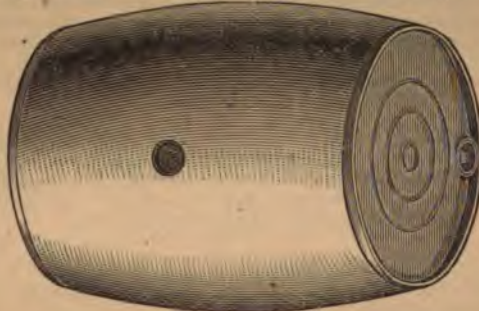
Mr. James Hudson said he was largely engaged in the provision business in London. He was not opposed to the sale of margarine, if it was sold as margarine, as the price came within the means of the poor. The cheap colonial butter would for a long time, perhaps, with the demand for margarine, but that would not be a good New Zealand and Australian butter sold at 8d. per lb. He objected very strongly to the mixture of margarine and butter, and was of opinion that it ought to be prohibited.

It did a great deal of harm to the dairy producers, and it was a fraud on the public. It produced very large profits for the manufacturer and the retailer, and there was a direct monetary incentive to keep up the fraud. He thought that the penalties should be increased, and that imprisonment should be inflicted for a second offence. Margarine was undoubtedly a wholesome article of food, but it should not be lawful to sell it in any establishment where butter was sold. It should be sold in separate establishments. In answer to Mr. Kearley, the witness admitted that it was not a very practical suggestion, and he did not expect it to be carried into effect. The inspectors under the Margarine Act did not do their duty. They were known everywhere, went into a shop and asked for a pound of cheap butter and received a pound of the best fresh butter or else half a

sovereign would be put into the scale. He thought the charges of adulteration made by a previous witness against the shippers of Normandy were most unjust. Mr. Harald Faber stated that he was appointed by the Danish Government to look after the interests of Danish producers in this country. In Denmark margarine had to be kept in packages of a certain shape and to be sold in wrappers marked with the word "margarine," and bearing the name of the manufacturer. Breaches of the law in these respects were punishable by fine and imprisonment. The witness was examined at considerable length by Sir C. Cameron and other members of the Committee as to the scientific tests employed to detect adulteration, after which the Committee adjourned.

STEEL BARRELS.

THE manufacture of these barrels is now a good way past the experimental stage, since they have been used for a considerable time in the petroleum, soap, glycerine, varnish, and other trades. That the advantages claimed for them are satisfactorily fulfilled is evidenced by the fact that we learn repeat orders have been given by numerous firms who have tried them. Under the patents of Messrs. Barraclough and Heaton, 20, Bucklersbury, E.C., great improvements have been made, notably in the bung. In the petroleum trade alone it is estimated that one million barrels are in use, and the advantages offered by these barrels apply forcibly to this trade as well as all industries which entail the transit of volatile oils or solvents, because these steel barrels do not leak, are oil and vapour proof, and can, owing to the special construction of the bung and bung-



hole, be easily sealed for Customs and other purposes. These barrels, as shown in the engraving, and which are made according to these patents, are of the same weight, size, and external shape as wood petroleum barrels, and cannot be distinguished from them at a distance; but there is one exceedingly important difference, viz., that whereas a wood barrel contains about 40 gallons, the steel barrel contains 50 gallons of petroleum. It is hardly possible to over-rate this advantage, and the economy resulting therefrom in the freight and the expenses of handling and storing. Practical men in the oil trade will be able to fully appreciate it, because in order to distribute 2,000 gallons of petroleum they need only 40 steel barrels instead of 50 wood barrels, showing a saving of 20 per cent. in the number of barrels employed. In the working of all businesses involving the use of barrels, it is self-evident that, in addition to the advantages above stated, a much smaller stock of steel barrels than of wood barrels will suffice, because in the case of the latter a large percentage is always undergoing repairs. Distributors of petroleum know to their cost the enormous expenses incurred through having a coopers department attached to every one of their tank stores. These become unnecessary when steel barrels are used.

These patent steel barrels are made with any desired bilge and of any size, to contain from 5 up to 500 gallons, and even more. The thickness of the steel can be increased at will for all special requirements. The barrels can be tinned, galvanised, lead-coated, painted, varnished, etc., as desired. Seeing that they retain their shape, size, and weight, the gauging and taring once properly done, remain correct; this is very important for various reasons. With wood barrels the reverse is the case, they become gradually heavier through absorption, and their capacity is liable to considerable variations through the re-hooping processes which they so frequently undergo.

RUSSIAN DUTY ON NAPHTHA.—Great consternation and dissatisfaction has been caused amongst the mercantile community at St. Petersburg by the appearance of a new ukase announcing that additional duties are to be imposed on timber, grain, naphtha, flax, and other raw export products. The new duty on timber alone represents as much as 75 kopecks (i.e., 1s. 6d.) per standard, or about one-half the present profit of the exporter.

Correspondence.

* We do not hold ourselves responsible for the opinions expressed by our correspondents.

FORMALIN.

(To the Editor of the Chemical Trade Journal.)

SIR,—For the information of "Methyl," the following appeared in the *New York Oil, Paint, and Drug Reporter*, 25th February, 1895.

"German papers give the details of manufacture for producing the new disinfectant known as formalin, now coming into considerable use in that country. It is a 40 per cent. solution of the gas-like composition called formaldehyde, and results from the oxidation of wood alcohol. It is said to be a perfectly harmless disinfectant for preventing and destroying bacilli and removing obnoxious odours without creating any odour in return, while it has poisonous properties that forbid its being taken internally, even in weak solutions—one tablespoonful to a quart of water being pronounced sufficient for most purposes. Its fumes are only hurtful when inhaled in considerable quantities. It saturates animal tissues very rapidly and prevents their decay, and when sprayed it disinfects and purifies the atmosphere."—Yours, &c.

A. JACOB.

[We shall be pleased to give the name of the English agent to "Methyl" and others interested, upon application.—ED. C.T.J.]

(To the Editor of the Chemical Trade Journal.)

SIR,—In reply to your correspondent who signs himself "Methyl," I wish to say that formalin is an aqueous solution of formic aldehyde, and that the process for the manufacture of this new disinfectant is, I believe, the subject of a patent.—Yours, &c.

Manchester, April 2, 1895.

R. W. HILL.

(To the Editor of the Chemical Trade Journal.)

DEAR SIR,—We notice from your Journal of March 30th, under the heading of "Correspondence," that some information is required with reference to the new disinfectant called "Formalin;" we beg to say in reply that we shall be pleased to supply it.—Yours truly,

FURST BROS.

THE ACTION OF FROST ON POTATOES.

(To the Editor of the Chemical Trade Journal.)

SIR,—I should be glad if you, or any of your readers, could briefly explain through the medium of your *Journal*, the chemical process that takes place through the action of frost on potatoes, leading to the conversion of some of the starch into sugars. I might state that any information would be of great interest to many dealers, who, during the late long frost have had large quantities of potatoes rendered useless in transit by rail.—Yours, &c.

Manchester, April 3rd, 1895.

CHARLES M. WILSON.

Selected Correspondence.

CHROME LEAD COLOURS.

(To the Editor of the Manchester Guardian.)

SIR,—My attention has been drawn to a letter in your issue of the 8th ult., signed "Progress," referring to the use of chrome lead colours (see also C.T.J., 408, p. 179). The writer of this letter is evidently not aware that many dyers have endeavoured to introduce the use of the other class of colours he names, but that the merchants insist on having the chrome colours, both in yellow, orange, and green, for the Eastern trade, and, of course, the dyers have to supply what they are asked for by their customers. I think that it is largely owing to the fact that these colours stand exposure and the Eastern sun so much better when produced with chromates of lead than when dyed by any other method. The merchants might also say that they could not get the weight by any other method, but, of course, this is between themselves and their customers abroad, and has nothing to do with the dyer, who has simply to carry out his instructions. There have been many attempts to introduce other methods of producing these shades, but so far without success, owing to the merchants refusing to accept yarns dyed by these methods—probably for the reasons stated above. There are different ways of producing chrome lead colours, but there are many dyers who produce chrome lead colours which are fairly clean; although, of course, if there were any scratch or sore upon the skin and the dyed cloth or yarn were brought into contact with it for any length of time there would be a liability to blood poisoning. Dyers would be

only too glad to adopt some other method of producing the required shades if chemists could produce a compound which would give a shade equal in fastness to the chrome lead colours for all purposes, viz., to stand light and exposure, heat and moisture, washing in cold and warm water, in soap and in alkalis. No such compound, however, is yet known, although many experiments have been tried, and the chrome lead colours still keep their position for the Eastern markets. The letter of your correspondent is somewhat misleading, in that he seems to suggest that the so-called aniline dyes could be used if the dyers would take them up. Many dyers have taken them up and done their utmost to introduce them, but they have not been successful, in consequence of the merchants declining to accept goods dyed in this way.—Yours, &c.

JUSTICE.

(To the Editor of the Manchester Guardian.)

SIR,—Having been engaged for many years in the dyeing of chrome colours for the East, I have read with interest the correspondence on the subject which has appeared in your columns. "Justice" has put the whole matter in a nutshell, whatever "Progress" may say to the contrary, for no cotton yellow, orange, or green dyes on the market will stand an Eastern sun like the chrome colours. "Progress" may know something about the manufacture or sale of aniline colours, but his statement that "chrome and lead are not used at all in the dyeing of the green shade" speaks badly for his "practical experience of actual facts."—Yours, &c.

Manchester, March 30, 1895.

FOREMAN DYER.

TIPS FOR TRADERS.

A SUGAR FACTORY is to be built near Teheran, capable of making 2,000 tons of sugar per annum. The capital of the Company, which is being formed, is to be £125,000.

INDIA-RUBBER preparation is being more carefully carried on at Sierra Leone, care being taken to suppress adulteration as far as possible.

MILK-TESTING in Norway has been placed upon an easy footing for the benefit of farmers and contractors. 120 samples can be tested for 6s. 8d., or 1,200 for 66s. 8d.

FANCY SOAPS are one of the articles certain unscrupulous English merchants have chosen to select as a means of imposing upon English manufacturers. They write for samples to see if the goods can be readily sold. On receipt, these are disposed of at a profit, but the manufacturer is told that there is no market for them, and the sample will have to be kept in stock many years. The point is not always worth disputing, but as 10, and even 20 houses have been known to be written to, the result is often a considerable profit.

TARIFF CHANGES.

There are from time to time many alterations in the Customs' regulations abroad, which it is well for those trading in chemicals, oils, paints and raw materials to be acquainted with. The following are some of the most recent changes of interest to the foregoing:—

WHITE LEAD in the dry state is subject to a duty of 1 rouble 5 copecks when imported into Russia. When in oil the duty is 3 roubles per pood.

LEAD AND SILVER are, by a new decree, no longer subject to duties in Spain, and the taxes on the mining industry are either wholly suspended or reduced.

PALM OIL AND OIL CAKE, which were formerly admitted into Italy duty free, have now to pay a duty of 4 lire per quintal—equivalent to 3s. 2d. per 220 lbs.

SOAP AND CANDLES, under the new tariff of San Domingo, have been reduced in duty 25 per cent.

CEMENT (Roman) is dutiable at 0.6 dollars per barrel up to 4 quintals.

STARCH pays 2.0 dollars per quintal.

INSECTICIDES, such as Paris green, etc., are under the new customs regulations of Mexico, dutiable at 0.02 cents. per kilogramme. Whale oil soap is charged 0.03 cents.

LEAD, either sheet, pipe, or pig, is now no longer subject to any import duty at Ceylon.

Trade Notes.

TALTALNITRATE COMPANY.—A cablegram has been received from the general manager of the company, stating that the railway to the company's *oficina* is now complete, and will be available for the company's traffic on April 6th, and that he has 25,000 quintals of soda ready to dispatch to the Port of Taltal.

PULP via THE SHIP CANAL.—Last week full cargoes arrived from steamers Cragg, Vanadis, Panther, and Borregaard from Sweden and Swedish ports. Among the arrivals for the week ending March 27th were 499 bales and 76 tons from Skien. From the city of Stockholm 5,186 bales were imported by Messrs. Johnsen and Co., of London, and 30 bales arrived "to order" from the same firm. Several additional cargoes are now at sea for Manchester.

AGEING OF LIQUORS BY COLD.—M. Raoul Pictet, the eminent chemist, claims that he has discovered a new method of ageing spirits artificially. His process consists in gradually cooling the liquor, for example, to 200° C. below zero, and then gradually bringing it again to the normal temperature. According to the *Revue des Sciences*, a frigorific laboratory in which this new discovery is to be put upon the point of being established in Paris.

IMPROVEMENT OF BOILER WATER.—A new method and apparatus for purifying this end has been devised by a Mr. Hanna, of the United States, which is simple in action, and permits of hard or dirty water being used without fear of incrustation or risk to the boiler. It is applicable to all types of steam boilers, and we understand is being adopted. Messrs. Boake, Roberts and Company tried an installation at the beginning of this year, and the report upon the same was satisfactory that they have ordered another. No boiler composed of iron. The apparatus, which is known as "The Hanna Feed Water Purifier," is patented all over the world, and has been universally tried where waters are troublesome. Those who should write for particulars to Messrs. Fraser and Company, Engineers and Boilermakers, Commercial-road, London, E., who are now fitting and introducing the apparatus into this country.

POTATO AND ONION CULTIVATION.—According to the report of the County Council for 1894, of potatoes large crops have been obtained for three years in succession with chemical manure containing proportions of nitrogen, phosphoric acid, and potash. Such crops have for three seasons given a more profitable return on a farm than farmyard manure. The omission of either of the constituents has had a prejudicial effect on the crop, the greatest being from a deficiency of nitrogen. Close planting has given a better crop in a wet season, even with a late variety of potato. Cultivation has again largely increased the yield, and the effects of the dry ground are appreciable in the second crop after the first. Spraying with *bouillie bordelaise* are of great value in potatoes, as they mitigate serious attacks of disease. Two sprayings are necessary. Heavy crops of late varieties have been grown on a farm in a wet season where spraying was adopted, but the feeding value of such varieties is, as a rule, lower than in a dry season. The dryness and, therefore, the feeding value of round varieties of potatoes has been the highest observed in a dry and also in a wet season. In the case of onions, application of insecticides in a wet season has been of no practical service. Spraying for preventing onion mildew must be made early, and the solution must contain some agent in order that it may stick to the glossy vertical surface of the plants.

METALS AND ALLOYS.—A glass case said to be worth £10,000, was one of the attractions at the London Royal Institution. The contents were a variety of globules and cast bricks of different appearance, used to illustrate Professor Roberts-Austen's researches on the rarer metals and their alloys. A slab of palladium, the rarest of the world, was valued alone at £7,000. Professor Moissan and Mr. Claude Vautin in England have, by different methods, succeeded in reducing and casting these highly infusible metals, most of which have hitherto been seen only in minute and fragmentary pieces; but whereas M. Moissan with his electric furnace succeeded in eliminating carbon from his products, which are, therefore, really carbides, Mr. Vautin, by the ingenious use of fused aluminium as a reducing agent, can produce large quantities of almost any one of the metals from their oxides in a very pure condition. The value of these metals, even if they are not produced commercially on a large scale, is still doubtful, but indications of their usefulness are not wanting. Chromium, for instance, has made a revolution in steel projectiles, while molybdenum threatens to become a popular craze. The experiments conducted at Woolwich, under the supervision of the Ordnance Committee, show, moreover, that we may expect from these metals with increasing points the peculiar power they possess of strengthening steels.

PERSONAL.—We learn that Mr. A. P. Trotter, formerly Editor of the *Electrician*, has resigned this post and started as a mechanical and electrical engineer. For about ten years Mr. Trotter has carried on this practice in conjunction with his editorial work. He has now decided to devote his attention solely to the former at 28, Victoria-street, S.W.

AN EASILY CURED NUISANCE.—At the last meeting of the Glossop Town Council a deputation appeared before the Council respecting the alleged nuisance in the vicinity of the gas works caused by the manufacture of sulphate of ammonia. It was resolved that the medical officer and sanitary inspector should visit the works daily for the next fortnight, if necessary calling in the assistance of an expert, and report to the next meeting of the Council.

MESSRS. PHILIPP HARRIS AND CO., LIMITED.—This well-known firm of laboratory furnishers have just issued a catalogue of apparatus designed specially to meet the requirements of the Science and Art Department, under the new regulations, which make practical physics a compulsory subject in some schools and an optional one in others. The catalogue has been prepared with due regard to economy, so as to enable schools to buy complete sets for the practical work of each student.

MANCHESTER SANITARY CONFERENCE AND EXHIBITION.—In connection with the annual meeting of the Manchester and Salford Sanitary Association this year there will be a conference on sanitary progress and reform, and a conference of the various district councils of registered plumbers in the Northern and Midland Counties of England. The Sanitary Association's conference will embrace a meeting of the subscribers and friends of the Committee for Testing Smoke Preventing Appliances, to receive the report on operations commenced in 1889. In the same section, Mr. Herbert Philips will present a statement of the objects of the recently formed Smoke Abatement League. The introductory address in this section will be delivered by Mr. A. E. Fletcher, Her Majesty's Chief Inspector of Alkali Works.

AN INCANDESCENT GAS LIGHT PENDANT.—With the rapid growth of the Welsbach incandescent light a field has been opened for improvements in fittings specially suited to these burners. The fragility of the mantle, though now largely overcome, renders rigidity desirable to avoid jars. Messrs. Best and Lloyd, of Birmingham, however, have made a great advance with their patent "Surprise" pendant, by working on just the opposite lines. Their pendant gives free motion in all directions, at any height, and being based on the swinging balance principle, all vibration is obviated, thus ensuring long life to the mantle. This end has not been achieved at the expense of efficiency or appearance. The pendants are made in numerous forms, being fitted with a patented and elegant shade which renders available the maximum light from the burner, so that one is generally enough for any ordinary sized room. The light remains in any position, its rotatory motion covering a wide area, so that the light can be used for the whole room, or concentrated at one point for special purposes. The joints are fitted with compensation screws, for taking up any wear should it be necessary to so do. Their combined neatness and convenience render them certainly so far the pendant *par excellence* for incandescent lighting, whether in the office or in the house. Special forms are made for dental and surgical use.

SOME LIGHT ON "ARGON."—M. Berthelot, the distinguished French chemist, and perpetual secretary of the Academy of Sciences, supplies the first bit of solid information concerning the chemical properties of Argon. In experimenting with a small quantity of that substance furnished by Professor Ramsay, he has found that under the influence of the silent electric discharge it combines with various organic compounds, and notably with benzene. It is decidedly interesting to discover that Argon, which is supposed to be totally inert, and has been vainly subjected to all the most potent agencies at the command of the chemist, is all the time capable of forming a variety of combinations under conditions which always exist in the atmosphere. Great interest also attaches to M. Berthelot's communication in connection with the obscurity which hangs over the chemical nature and relationships of the new substance. For he pointed out years ago that nitrogen combines, under the influence of the silent discharge, with hydrocarbons like benzene, with carbohydrates such as go to build up the tissues of plants, and even with tertiary products such as ether. A bit of moist filter paper, for example, exposed to the silent discharge in presence of nitrogen, whether alone or mixed with oxygen, absorbs a considerable amount, producing a nitrogenized compound which, on heating with soda-lime, gives off abundance of ammonia. As Argon seems to be absorbed in the same way, it would be very interesting to learn whether its compound also yields ammonia on heating, or if not ammonia, then what? M. Berthelot promises further details shortly; and meanwhile, we may congratulate ourselves upon having obtained an introduction to this very shy and retiring substance, which, so far as the acquaintance goes, seems to bear a remarkable resemblance to nitrogen.

MALGAMATION OF PAPER MILLS.—The Sulphite Pulp Mills Company, whose works are at Hjerpen, Sweden, have amalgamated with the well-known firm of Messrs. T. Owen and Company Limited, Paper Works, Cardiff.

MESSRS. JULIUS HULSEN & CO.—We notice this firm has an exhibit at the Builders' Exhibition in London showing the advantage of using their Barytes Carbonate as a means of preventing the disintegration of bricks and terra cotta, an article on which appeared in *Journal*, No. 352, page 115.

PETROLEUM LAMP FATALITY.—A woman named Kay, 60 years of age, who lived alone at 15, Abbott-street, Manchester, was burned to death in her house on Saturday morning last. When an entrance could be made into the house the body of the woman, badly burned, was found under a bed in the front room. The fragments of a petroleum lamp were found on the floor, and there seems no reason to doubt that explosion or upsetting of the lamp was the cause of the fire. It is noted that the poor woman was in the habit of burning the lamp all day.

Market Reports.

TAR AND AMMONIA PRODUCTS.

Creosols keep fairly steady at last week's quotations for 90's, and 50's, 1d. to 1s. 1d. for 50/90's. Carbolic acid is firmer, especially for 60's, although 60% crude is still quoted 1s. 6½d., 40% crystals have been bought ahead at 5¼d. Naphthas continue rather quiet, there being no change in the price of either crude or solvent. Creosote is not in very good demand at the old quotation. Anthracene is unaltered at last week, both as regards price and position. Pitch keeps steady at 3s. 6d. to 3s. 4d., f.o.b. East Coast.

Sulphate of ammonia is unsatisfactory. All buying is being done in the North on account of the prices ruling in the North. In the South stocks are accumulating elsewhere. Prices, however, do not show signs of becoming much easier either in the South or on the East coast. The following quotations, with the exception of Leith, are only for London outside makes £10. 12s. 6d., Liverpool £10. 12s. 6d., and Leith £10. 10s. Forward business neglected.

REPORT ON MANURE MATERIAL.

There continues to be more doing on spot, without much alteration in prices; but the forward position is neglected, the manure season not being sufficiently advanced to enable manufacturers to judge as to their season's requirements in material. The quotations for mineral phosphates remain as last reported, but there is no disposition to buy for United Kingdom or Continent, even at some concessions in prices asked. River Plate bones are also neglected, buyers not filling their requirements for the season. Not much over £4. 10d. can be obtainable for anything afloat, but for autumn shipment a partial advance would have to be paid to induce business. Crushed boned bones for autumn shipment offer at £4. 7s. 6d. per ton, but finding buyers. On spot Bombay bone meal is scarcer, and 10s. to £4. 12s. 6d. per ton asked. Something under £4. 10s. can probably do for parcels afloat, and off season shipments offer at 5s. per ton. Common grinding bones are selling at £4. to 3s. 9d. per ton, according to quality. Nitrate of soda is easier in positions. On spot fine quality may be had at 8s. 7½d., rails, on, and at 8s. 9d. per cwt. ex quay Liverpool. Arrived cargoes worth 8s. 3d. to 8s. 4½d. per cwt., according to size and test.

MISCELLANEOUS CHEMICAL MARKET.

The alkali trade business is fairly active for export, both for bleaching powder, caustic soda, and alkali, though no improvement in prices is yet recorded. Current quotations to-day are:—Bleaching powder, hardwoods, f.o.b., £7. 5s. per ton; softwoods, £6. 17s. 6d. per ton, and same prices f.o.r. at makers' works. Alkali, 58%, is at movement in price, and is still quoted at £3. in bags, makers' price. Caustic soda, 77%, £9. 10s.; 74%, £8. 10s.; 70%, £7. 10s.; £6. 10s.; 10-ton lots and upwards, f.o.b. Liverpool. In chlorate of soda a slight improvement is reported: price, 4½d. to 4¾d. per lb. Chlorate of soda unaltered at 6½d. per lb. Sulphur continues quiet, and demand quiet at £3. 12s. 6d. per ton, f.o.r. Vitriol and other acids are firm. Saltcake in better demand, both for home export, bags, f.o.b., 22s. 6d. per ton. Sulphate of copper rather quiet at £15. to £15. 5s. Potash, caustic and carbonate,

still in short supply, and prices firm. Nitrate of soda 8s. 6d. per spot and forward. Acetates of lime, brown and grey, are quiet and prices are unaltered at £5. 17s. 6d. and £8. 10s. respectively at usual points of consumption. All other acetates in small demand without improvement in price. Yellow prussiate of potash is weaker at 8½d. to 9d. per lb. Cyanides are also lower. Powdered arsenic still in short supply at £14. 15s. nett, f.o.r. Sulphocyanides are quiet, and there is at present no sign of improvement in the general demand for chemicals, trade in the manufacturing centres being generally quiet.

THE METAL MARKET.

LONDON, WEDNESDAY.—Pig iron, steady: Scotch warran at 41s. 9d., Middlesbrough 34s. 3d. cash, and hematite 42s. Copper, easy: Chili bars, G. O. B.'s and G. M. B.'s, at £39. 6s. 3d. to £39. 11s. 3d. cash, and £39. 13s. 9d. to £39. 13s. three months. Tin, quiet: Straits closed at £64. to £64. 10s. and £64. 7s. 6d. to £64. 17s. 6d. three months; Australian, £64. English ingots, £68. Lead, quiet: Spanish, £10. 1s. 3d.; £10. 5s. Silesian spelter: ordinary, £13. 15s. Nickel, 11s. Antimony, £31. 5s. Quicksilver: first hands, £6. 10s.; second, £6. 9s. Copper shares, easy: Cape, 1½ to 1½; Copiapó, 1½; Libiola, 3½ to 3½; Mason and Barry, 1½ to 2½; Rio Tinto to 1½; Tharsis, 4½ to 4½.

LIVERPOOL MINERAL MARKET.

Our market has somewhat improved during the week; prices are whole are firmer, and in some cases have experienced an advance. Manganese ore: There are no arrivals to report, whilst stocks have been well drawn upon; prices, nevertheless, remain unaltered, as at the last quotations. Ground manganese continues in steady demand at £6., £8., £10., and £12. 10s. per ton, according to quality. Manganiferous iron ore: There has been a steady demand for it, and prices are without alteration at 15s. to 16s. per ton, for Grecian, and 16s. to 17s. 6d. per ton, c.i.f., for Spanish, in 25 cwt. For bauxite, Irish Hill brand, very extensive inquiries are being made for this brand particularly, chiefly arising from the manufacture of aluminium metal therefrom; prices are, therefore, with the probability of an advance. Chrome ore: There have been two small arrivals this week, very high-class quality; these are sold to arrive, as well as considerable quantities to follow: price therefore, firm at 70s. per ton for 40% and 110 to 115s. per ton for 60% ore. French chalk: There have been more arrivals, but the quality is good, and prices are unaltered: "Angel White" and "Medal" brands at 70s., 80s., 90s., and 110s. per ton, according to quality. Tungsten metal is steady at 1s. 9d. to 2s. 3d. Plumbago is selling freely, and the demand continues good for foundries and lubricating qualities at £5., £6., and £10. per ton. Arsenic still continues scarce. Barytes: carbonate is easier at 90s. per ton for fair to good quality; sulphate, lump, 40s. per ton, ground from 45s. to 70s. per ton. China clay: 22s. 6d., 30s., and 40s. per ton for prime qualities. Bog ore continues steady at about 22s. per ton. Fluorspar: lump and ground in fair demand at 40s., 50s., and 60s. per ton, according to quality. Feldspar is steady at 35s. to 40s. per ton. Cryolite remains unaltered at £40. Oxide of uranium is at 10s. 6d. to 11s. per lb.

TYNE CHEMICAL REPORT.

Chemicals are dull, with only a moderate demand; prices remain unaltered, on a basis of £1. 16s. and £1. 15s. 6d. per cwt. Crystals. Caustic soda, 76/77%, £9. 10s. per ton, for which there is a good demand. Sulphur steady, at £4. 5s. Other products unaltered.

Bleaching powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, nett; caustic soda, 76/77%, £9. 10s. per ton, nett; do., 70%, £8. 10s. per ton, nett; recovered sulphur, 2 cwt. bags, £4. 5s. per ton, nett; soda ash, 48%, £3. 15s. per ton, nett; do., 52%, £4. 2s. per ton, nett; do., 56%, £4. 10s. per ton, nett; alkali, 58%, £3. 15s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 52%, £3. 15s. per ton, nett; do., 52%, £5. 5s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. per ton, nett; do., 1 cwt. kegs, £6. 10s. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. per ton, nett; soda crystals, casks, £1. 16s. 6d. per ton, gross weight; do., 2 cwt. bags, £1. 16s. 6d. per ton, net; chlorate of potash, 5½d. per lb., less 6%; pearl ash £3. 3s. per ton, nett; pure white sulphate of alumina, £4. 2s. per ton, nett; blanc fixe, £7. 10s. per ton, nett; chloride of lime

er ton, nett; carbonate of alumina, £28. 15s. per ton, in 5 ton lots, £28. 1s. nett.

South Durham salt steadier, at 9s. and 9s. 6d. per ton,

—Trade is quiet, and prices easier all round. The idea prevails that the tendency of rates will be lower. To-day's under:—Best Northumbrian steam, 8s. 9d. to 9s. per ton; other steams, 7s. 9d. to 8s. per ton; small steam, 3s. 6d. to 3s. 9d. coals, 6s. 9d. to 7s. 3d. per ton; bunker coals, 7s. to 7s. 3d. coke steady, 13s. to 13s. 6d. per ton.

PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

The situation here remains about the same, nothing of much importance appears to have happened during the week. There has been a port of 24,841 qrs. of linseed, also during the week, 7,019 qrs. of linseed from Alexandria, and 1,500 tons from Mersyne have been the principal imports into Hull up to date compared with the same time last year have been—Linseed, 131,517 qrs., against 125,822 qrs.; rapeseed, 25,822 qrs., against 38,296 qrs.; cottonseed, 74,493 tons; olive oil, 2,887 casks, against 4,826 casks; oilcakes, 4,853 tons; tallow, 3,708 cwt., against 4,624 cwt.; turpentine, 4,300 brls. Linseed oil, after declining to 18s., has now recovered and closes steady at 18s. 3d., spot, to next May-Aug. still quoted 18s. 3d., and Sept.-Dec. 18s. Boiled oil, 25s. per ton extra. Export for the week, 1,500 cwt., on oil has improved about 5s. per ton, and is quoted 15s. 10d. April, and 16s. 6d. May-Aug.; Nov.-April, 16s. 10d. per cwt.; casks 17s. 6d., and ordinary barrels 25s. per cwt. Export for the week, 4,960 cwt. Cod oil, £16. 10s. to 17s. Castor oil, 2½d. per lb. for first pressure. Olive oil, unchanged. Boiled paint oil, £12. per ton. Soft oil, 6d. per cwt.

—Linseed cakes somewhat steadier tone, and rather more recent decline. 95% pure, £6. 5s. to £6. 7s. 6d.; 50% pure, £6. 10s. to £6. 12s. 6d. Cotton cakes steady: best 5s. to £3. 7s. 6d.; seconds, £3. 2s. 6d. to £3. 5s. Rape inquiry and firmer, £2. 7s. 6d. to £2. 12s. 6d. per ton. Feeding cakes, £4. 2s. 6d. per ton.

—In better demand, with prices unaltered, and are: black, blue, green and yellow ochre paints, per ton. Ready mixed paints, in lever tins, from £24. per ton. Black varnish, £5. 10s. per ton. Red and white lead, per ton.

Dry ultramarines from 2d. to 9d. per lb. Vermillion, 6d. per lb. Lime blue, £16. per ton. Paint remover, 10s. per gallon. Oak varnish from 5s. 6d. per gallon.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

Palm oil keeps steady, holders being firm. Considerable quantities have been made in Cameroon, Benin, and Salt Pond at £20. 15s., and £19. per ton respectively. Olive keeps firm in price, and the market, the general tone being strong. There is a slight advance in linseed, there being a slight advance: Liverpool makes asks are quoted 20s. 6d. to 21s. 6d. per cwt., an advance which has ruled earlier in the week. The same price nominally last week, but to-day there is a fair amount of business at these figures. Cottonseed firmly held at 17s. 6d. for Liverpool refined, though the business doing is but small. Castor oil is firm, there being no spot sellers under 2½d. per lb. First pressure French is also quoted 2½d. per lb. There is virtually no change in tallow, there being a fairly steady demand at full prices. Resin is rather quiet, owing to prices, but well maintained, the market showing no signs of weakness. Turpentine are quoted 23s. 3d. per cwt., with but a moderate demand. Petroleum is firmly held for good prices, namely, 5½d. to 6d. per gallon, according to quality, and 5½d. per gallon for refined.

—S are steady, without alteration in prices. Devonshire, common, £10., medium, £12., best, £15., common, 40s.; medium, 50s., best, 60s.; Welsh, best, 5s., 50s., and common, 18s.; Irish, Devonshire, 40s. to 50s., J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Umber: Devonshire, 50s. to 55s. White lead, £16. Red lead, Venetian red, £6. to £10. Cobalt: Prepared oxide, black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2, 2s. 6d. of iron: Common, £7.; medium, £10.; finest, £20. to £22. 10s. to £25.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

Reports as to the call for chemicals needed in connection with the renewal of shipments to the Continent are satisfactory, and the forecast indicates a large bulk of material for overseas transit; but the general market is nevertheless weakly in tone. As a rule, prices are maintained, but, as regards some of the articles, with difficulty only.

Sulphate of ammonia feels itself still more feeble in this section of the market, after late forced selling; and even at the further reduced quotations buyers are scarce and chary. The views of sellers are somewhat divergent, and some are inclined to stiffen their attitude and wait if necessary. The range of quotation is at present £10. 10s. to £10. 15s. Leith prompt. Nothing doing in forward.

A meeting of the Scotch oil industry representatives is to be held in Glasgow this week, to deliberate in the chances of an advance in burning oil, consequent on the stiffer position of American petroleum of late. It is believed that those important delegates lately absent will on this occasion be present. Meanwhile, prices of products undergo no change, and sales of solid paraffin for forward at the advance are procurable only on the safeguarding conditions already indicated.

Chief prices current are:—Soda crystals, 35s. nett, Tyne; soda ash, 48/52°, £3. 12s. 6d., to £4. 5s. nett, Tyne; white alkali, 48/52°, £4. 10s. to £5. 5s. nett, Tyne; alum in lump, £5. 5s. nett, Glasgow; caustic soda, white, 74° £8. 12s. 6d., 70/72° £7. 12s. 6d., 60/62° £6. 12s. 6d., and cream 60/62° £6. 10s., all nett, Liverpool; bleaching powder, £6. 5s. to £7., nett, Tyne; saltcake, 17s. 6d.; borax, English refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 4¼d. less 5%, Liverpool; nitrate of soda, 8s. 7½d. to 9s. 10½d.; sulphate of ammonia, £10. 10s. to £10. 15s. prompt f.o.b. Leith; salammioniac, first and second white, £39. and £37. nett, any port, sulphate of copper, £15. 5s. less 5%, Liverpool; paraffin scale, hard 2½d.; and soft, 1½d. to 2½d. per lb.; paraffin wax 120° semi-refined, 2½d. to 2¾d.; paraffin spirit (naphtha), 4½d. to 5d. per gallon; paraffin oil (burning), 4¼d. at works, for Scotch buyers (English sales, ½d. to ¾d. lower); ditto (lubricating) 865° £4. 5s.; 885° £4. 10s. to £5., and 890/895° £5. to £5. 10s. Week's imports of sugar at Greenock were 28,712 bags cane unrefined, 4,483 bags beet unrefined, and 2,900 bags beet refined.

Gazette Notices.

PARTNERSHIPS DISSOLVED.

J. SHAW, J. B. TONGE, and J. JOHNSON, brick and tile manufacturers, Barrow-in-Furness, under the style of the Ormskill Brick Company, so far as regards J. B. Tonge.

G. G. WOLFF and H. C. WILLIAMS, ink, gum and stain manufacturers, Acton-street, Haggerston, and Chapel-street, Islington, N., under the style of G. G. Wolff and Co.

BANKRUPTCY ACTS, 1883 and 1890.

Receiving Orders.

CARTWRIGHT, Z., Fenchurch-street, London, E.C., colour manufacturer.

HILL, ARTHUR, Kidderminster, oil and colour merchant.

PENNY, WILLIAM, late of Manchester, now Ashton-under-Lyne, paint and varnish merchant.

Adjudication.

HILL, ARTHUR, Kidderminster, oil and colour merchant.

The Patent List.

This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

Separating Chlorine from Gases Mixed therewith. H. Loesner. 5,651. March 18.

Producing Zinc Chlorides. C. Hoepfner. 5,662. March 18.

Manufacture of Aluminium Alloys. J. B. Torres. 5,720. March 19.

Producing and Liquefying Acetylene Gas. H. H. Lake. 5,730. March 19.

Smoke-Consuming Apparatus for Furnaces. J. R. Williams. 5,761. March 19.

Artificial Fuel. G. Haycraft. 5,860. March 20.

Improved Tanning Process. S. L. Evans. 5,924. March 21.

Recovering Ammonia and Extracting Zinc from Flux Skimmings. C. G. T. Bennett, E. H. Shortman, and B. Bracey. 5,958. March 21.

Preparation of Phosphoric Acid for Treating Alkaline Chlorides, etc. N. Bassett and W. Von Baranoff. 5,966. March 21.

Fertilizer for Vines, etc. R. Donaldson. 5,988. March 22.
 Manufacture of Sodium Cyanide. W. M. Mackey and J. F. Hutcheson.
 6,009. March 22.
 Filtering Oils. J. Marshall and G. A. H. Douglas. 6,060. March 23.
 Sewage Precipitating Tanks. F. P. Candy. 6,067. March 23.

Improvements in Manufacture of Certain Colours or Pigments. J. E.
 Campbell. 6,083. March 23.
 Manufacture of Detergent. S. Woble and A. C. Irwin. 6,094. March 23.
 Rendering Acetylene Suitable for Lighting and Heating. L. M. Butler.
 6,101. March 23.

IMPORTS OF CHEMICAL PRODUCTS

AT

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending March 23rd.

Acetate of Lime—
 U. States, 863 pkgs. R. & J.
 Garroway

Acetic Acid—
 Holland, 60 pkgs. A. & M. Zimmermann
 " 50 Philipps & Graves

Acetic Acid and Acetone—
 Holland, 144 pkgs. A. & M. Zimmermann

Acetone—
 Holland, 3 pkgs. T. H. Lee
 France, 13 W. G. Blagden

Alkali—
 France, 222 c. Arnati & Harrison

Aluminium—
 Belgium, 4840 Major & Field

Ammonium Chloride—
 Belgium, 99 pkgs. H. Lorenz

Anthracene—
 Holland, 243 pkgs. Burt, Boulton & Co.

Antimony Ore—
 France, 8 c. H. Johnson
 Portugal, 50 t. J. Bamburgh

Arsenic—
 France, 9 pkgs. E. Bauzin

Barium—
 Germany, 66 pkgs. H. Lambert

Barium Chloride—
 Germany, 26 pkgs. Petri Brs.

Barytes—
 Belgium, 56 cks. J. L. Lyon & Co.
 " 48 A. Zumbach & Co.
 " 13 Leach & Co.
 " 84 O'Hara & Hoar
 Germany, 110 W. Harrison & Co.
 France, 6 C. J. Langmead
 Belgium, 10 J. L. Lyon & Co.
 Germany, 66 W. Harrison & Co.
 Holland, 111 W. Harrison & Co.

Boric Acid—
 Italy, 10 pkgs. J. Knill & Co.

Camphor—
 China, 267 pkgs. L. & I. D. Jt. Co.
 Germany, 179 R. Warner & Co.
 " 16 S. Figgis & Co.
 " 100 H. A. Litchfield & Co.
 " 7 T. H. Lee

Caoutchouc—
 Singapore, 100 c. Prop. Bull Wf.
 U. States, 28 Schloss Brs.
 " 23 W. Pope & Co.
 E. Indies, 148 L. & I. D. Jt. Co.
 Zanzibar, 14 " "
 France, 1 " "
 Rangoon, 7 " "
 " 59 Middleton S. S. Wf.
 " 25 Pickford & Co.
 Penang, 150 E. Boustead & Co.
 Madagascar, 4 S. Figgis & Co.
 Ecuador, 8 Prop. Bull Wf.

Castor Oil—
 France, 30 brls. Burrell & Co.
 " 214 pkgs. Lucas & Spencer's
 " W. L. Ld.
 Italy, 60 cks. Capt. Dyer
 E. Indies, 98 cks. Cayser, Irvine & Co.
 Belgium, 30 brls. J. T. Morton

Chemicals (otherwise undescribed)
 Germany, 44 4 cks. Philipps & Graves
 " 45 T. H. Lee
 " 5 pkgs. Hernu, Peron & Co.
 " 14 Craven & Co.
 " 28 A. & M. Zimmermann

Belgium, 5 7 pkgs. O. Scholzig
 Denmark, 5 Tegner, Brice & Co.
 Holland, 7 J. Barber & Co.

Cream of Tartar—
 Spain, 4 pkgs. B. & F. Wf. Co.
 France, 32 " "
 " 10 M. Ashby, Ld.
 " 20 W. C. Bacon & Co.
 " 6 F. C. Devon & Co.

Dextrine—
 Germany, 24 pkgs. City Coml. Wf. Ld.
 " 50 Hernu, Peron & Co.

Dyestuffs—
Annatto
 Ceylon, 20 pkgs. L. & I. D. Jt. Co.

Argols
 France, 2 pkgs. B. & F. Wf. Co.

Cochineal
 Canaries, 41 pkgs. Sperling & Williams

Cutch
 Rangoon, 350 pkgs. Lewis & Peat
 " 500 W. H. Cole & Co.
 " 450 Arracan Co.
 E. Indies, 10 Ralli Brs.

Divi Divi
 E. Indies, 85 pkgs. Culverwell, Brooks & Co.

Extracts
 B. W. L., 20 pkgs. W. I. Chemical Works

France, 21 Prop. Chmbln's Wf. Ld.

" 20 Beresford & Co.

Denmark, 2 J. Sinclair & Son

Germany, 200 J. Knill & Co.

Belgium, 35 Leach & Co.

U. States, 100 Skillbeck Brs.

Gambier
 Singapore, 152 pkgs. W. Balchin
 " 250 Brown & Elmslie
 " 180 S. Barrow & Brs. Ld.
 " 270 L. & I. D. Jt. Co.
 " 460 C. S. Cox & Co.
 " 265 E. Boustead & Co.
 " 253 Horsley, Kibble & Co.

Indigo
 E. Indies, 496 chta. L. & I. D. Jt. Co.
 " 150 Elkan & Co.
 " 64 Langstaff & Co.
 " 2 cs. Gray,
 " Dawes & Co.
 " 16 pkgs. W. Balchin
 " P. & O. Co.
 " 129 Ross & Deering
 " 114 J. Owen
 " 54 Stansbury & Co.
 " 16 E. Bower & Co.
 " 12 Parsons & Keith
 " 7 Thomasset & Co.
 " 49 G. Rahn & Co.
 " 84 Ralli Brs.
 " 15 Park, Macfadyen & Co.
 " 47 Blyth, Green & Co.
 " 6 Croysdale & Co.
 " R. Von Glehn & Sons
 Germany, 8 E. Theodore & Co.
 " 10 L. & I. D. Jt. Co.
 " 41 Ralli Brs.
 " 1 pkgs. T. H. Lee
 Holland, 1 Philipps & Graves

Logwood
 Canaries, 20 t. H. Clarkson & Co.

Myrabolams
 E. Indies, 670 pkgs. Whitstable S. Co.
 " 1,000 Darling Brs.
 " 2,020 Baxter & Hoare
 " 2,948 L. & I. D. Jt. Co.
 " 350 Page, Draper & Co.

Safflower
 E. Indies, 1 pkgs. Devitt & Hett

Tanner's Bark
 Germany, 1 Beresford & Co.

Adelaide, 91 Devitt & Hett

Belgium, 36 " "
 Natal, 22 Dyster, Nalder & Co.

Turneric
 E. Indies, 215 pkgs. J. P. Alpe & Co.
 " 683 Hale & Son
 " 29 Forbes, Forbes & Co.

Farina—
 Germany, 50 pkgs. J. T. Morton
 " 100 Dunlop Brs. & Co.

Glucose—
 Germany, 200 pkgs. 200 c. J. Barber & Co.
 " 80 80 c. T. H. Lee
 France, 100 100 c. L. Norman & Co., Ld.

U. States, 914 1,380
 " 1,950 1,950 Fellows, Morton & Co.

" 1,937 5,034 L. Sutro & Co.

" 375 2,121 Soundy & Sons

" 50 275 H. Johnson & Sons

" 50 280 J. Puddy & Co.

" 50 300 Deering & Robottom

" 116 634 R. G. Hall & Co.

" 250 250 Trier, Meyer & Co.

" 1,000 1,000 G. Hedges & Son

" 250 250 Page, Son & East

" 1,150 1,849 Ohlenschlager Brs.

" 500 500 Barrett, Taggart & Co.

" 500 500 Hoare, Wilson & Co.

" 500 500 Beck & Pollitzer Prop.

" 100 600 Cooperage Wf. Harrison

" 250 250 Burton & Co.

Guano—
 Spain, 70 t. Anglo-Cont. Guano Wks.

Nassau, 300 " "

Manure—
 Sydney, 4 t. G. S. Vuill & Co.
 E. Indies, 200 A. Hunter & Co.
 " 100 Fox, Roy & Co.
 Germany, 1 T. H. Lee

Methyl Alcohol—
 Germany, 7 dms. Stein Brs.

Mica—
 U. States, £12 Carter, Paterson & Co.
 E. Indies, 1,475 W. M. Smith & Sons
 " 6 F. Claydon & Co.

Molasses—
 U. States, 478 cks. 2,650 c. L. Sutro & Co.
 " 300 1,780 c. Moreton Cox Brs.
 " 500 3,020 J. R. Francis & Co.

Nitre—
 Holland, 4 cks. W. H. Carey & Sons

Ochre—
 France, 150 cks. W. Harrison & Co.
 " 128 J. L. Lyon & Co.

Oxalic Acid—
 Holland, 9 pkgs. Beresford & Co.

Osokerit—
 Germany, 2 pkgs. Drolenvaux & Brenner

Paraffin Wax—
 U. States, 266 brls. Williams, Tarr & Co.
 " 266 Mordant B.

Phosphate of Lime—
 Holland, 145 t. Schofield, Wf. & Co.

France, 150 A. Hamer & Co.

Holland, 230 Miller & Johns

Phosphate Rock—
 U. States, 1,350 t. Odian's Chem. Manuf. Co.

Plumbago—
 Germany, 9 cks. E. Gollan
 Ceylon, 74 brls. R. G. B. & Co.

" 70 Doullon & Co.

" 50 A. Hag

Potassium Bicarbonate—
 Holland, 80 c. A. & I. Zimmermann
 " H. Lamb

Potassium Carbonate—
 Holland, 99 c. A. J. Lake & Co.

France, 80 Petri B.

Belgium, 103 H. Lamb

Germany, 105 Petri B.

France, 200 J. A. B.

Potassium Chloride—
 Germany, 200 pkgs. W. G. Blagden

Potassium Cyanide—
 Germany, 15 pkgs. Beresford & Co.

Potassium Oxymuriate—
 Sweden, 40 pkgs. S. Bar & Co.

Pumice Stone—
 Italy, 4 t. C. W. War

Pyrites—
 Spain, 2,663 t. C. Temann, S. & Co.
 " 1,012 Anderson, Anderson & Co.

Saltpetre—
 Germany, 163 cks. P. Hecker & Co.
 " 150 bgs. C. Wm. & Co.

" 60 cks. T. Merry & Co.

E. Indies, 644 L. & I. D. Jt. Co.

Soapstone—
 U. States, £95 Loco Packing Co.

Soda—
 Holland, 98 c. Carey & B.

Belgium, 14 Beresford & Co.

Sodium Acetate—
 France, 25 pkgs. H. Lam

Sodium Bicarbonate—
 Holland, 5 c. J. Barber & Co.

Sodium Bichromate—
 Holland, 49 pkgs. C. Temann, S. & Co.

Starch—
 Germany, 18 pkgs. Philipps & Graves
 " 680 Hume & Co.
 U. States, 250 Seaward Brs. & Co.
 " 115 Orange Co.
 Belgium, 40 Taylor B.

" 50 Leach & Co.

" 160 F. Claydon & Co.

" 374 Prop. Scott's W.

" 3 Sower, Sons & Co.
 " 40 H. Johnson & Sons
 " 120 C. J. Capen & Co.
 " 140 Arnati & Harrison
 " 425 A. R. Curtis & Co.
 " 30 J. Barber & Co.
 " 254 Philipps & Graves
 " 20 Prop. Scott's W.
 " 200 G. Rahn & Co.

Stearine—
 Holland, 48 cks. Palmer & Co., Ld.
 France, 100 bgs. Walbaum & Co.

Belgium, 97 H. Hill & Son

France, 41 M. Harris & Co.

Sulphur—
 Italy, 10 t. J. Kitchin & Co.

Chloride—	
d, 20 pkgs.	J. Owen
and Stearine—	
n, 11 cks.	T. H. Lee
399	A. J. Smith
ic Acid—	
40 pkgs.	B. & F. Wf. Co.
d, 17	"
es, 55 pkgs.	J. Puddy & Co.
tine—	
asia, 104 brls.	C. B. Leighton
50	F. & S. Chiesman
26	Dussek Bros. & Co.
arine—	
n, 4 brls.	W. Harrison & Co.
ty, 10 cks.	Steinhoff, Sons
	& Co.
	2 cs. H. Brooks
	& Co.
6	C. J. Langmead
es, 5 pkgs.	W. A. Little
ty, 2	H. Lambert
12	Flageollet & Co.
is—	
2 pkgs.	H. Lorens
3	B. & F. Wf. Co.
Lead—	
ty, 64 cks.	M. Ashby, Ltd.
3	Petri Bros.
85	Randall Bros.
20	G. Farniloe & Sons
31	W. & A. Hampton
28	W. & A. Rose
17	A. Zumbek & Co.
19	Burrell & Co.
36 brls.	J. L. Lyon & Co.
ty, 64	Steinhoff, Sons
	& Co.
4, 60	T. & W. Farniloe
38	W. Balchin
ulp—	
r, 970 pkgs.	C. Christopherson
	& Co.
730	W. E. Bott & Co.
160	H. Johnson & Sons
280	Becker & Co.
200	Tough & Henderson
323	W. G. Taylor & Co.
500	E. J. & W. Goldsmith
1,361	"
540	W. Balchin
788	Ekman Pulp & Paper
	Co.
83	Henderson,
	Craig & Co.
il, 300	L. Krobrough
100	Corina T. E. &
	W. P. Co.
rk, 3,856	Daily Telegraph Co.
556	C. S. Lovell
40	C. Christopherson
	& Co.
80	Henderson, Craig
	& Co.
203	W. G. Taylor & Co.
160	Johnson & Jorgensen
ty, 104	W. G. Taylor & Co.
507	E. J. & W. Goldsmith
ide—	
5 cks.	M. Ashby, Ltd.
50	J. L. Lyon & Co.
12	Little & Johnston
100 brls.	F. Pryor
12	Smith,
	Sundius & Co.
ty, 100	M. Ashby, Ltd.
50	J. Matton
lphate—	
ty, 6 pkgs.	Drolenvaux &
	Bremner
6	Stobbs, Wilson & Co.

VERPOOL.

Week ending March 21st.

of Lime—	
ork, 664 bgs.	Manchester
	Ship Canal Co.
181	
ny—	
iso, 38 bgs.	Fruhling &
	Goschen
146	Hainsworth
	Watson
150	
or—	
ty, 3 cks.	

Caoutchouc—	
Hamburg, 10 bls.	Brown,
	Geveke & Co.
Valparaiso, 10	Kleinwort, Sons
	& Co.
Chemicals (otherwise undescribed)	
Havre, 14 cks.	Cunard S. S.
	Co., Ltd.
Baltimore, 59	
Cod Oil—	
Hamburg, 15 brls.	
Cottonseed Oil—	
New York, 1 550 brls.	
Cream of Tartar—	
Tarragona, 5 cks.	
Dyestuffs—	
Algarobilla	
Valparaiso, 320 bgs.	F. Treleven
	Schmitz & Co.
" 593	H. H. Jones
" 393	& Co.
" 90	Woodgate & Co.
Cochineal	
Gd. Canary, 34 bgs.	Canary I.
	Trading Co.
" 14	Sperling &
	Williams
Divi Divi	
Hamburg, 958 bgs.	E. Brownbill
Rio Hache, 245 t.	& Co.
Extracts	
Baltimore, 25 brls.	R. Schloesser
	& Son
" 15	Houston &
	Laurisch
Nantes, 560	Oak Extract Co.
Fustic	
New York, 447 ps.	Leech, Harrison
	& Co.
Savanna, 868 lgs.	G. H. Muller & Co.
Carthage, 1,327	Isaac &
	Samuel
Baltimore, 2,781	
Logwood	
Antigua, 392 t.	E. Brownbill
	& Co.
Laguna (Mex.), 54	Skelton &
	Scholfeld
Madder	
Smyrna, 12 bls.	
Saffron	
Valencia, 2 cs.	
Sumac	
Barcelona, 100 bgs.	
Valonia	
Marathonisi, 163 t.	
Syria, 378 bgs.	C. G. Nicolaidi
" 1,850	Papayanni &
	Jeremias
" 231	Barff & Co., Ltd.
Smyrna, 940 kts.	Barry Bros.
" 950	250 t. G.
	Essayan & Co.
Constantinople, 236 bgs.	A. Papazoglu
Syria, 802	G. T. Scriui
" 340	A. C. Cozzipachi
Glucose—	
New York, 150 brls.	
Hamburg, 40 cks	
Baltimore, 700	
Glue—	
Hamburg, 8 cks. 20 bgs.	
Boston, 5 brls.	London
" 48 crts. 5	Paste Co.
	Richards
Rouen, 52 cks.	Co-op. W'sale
	Society, Ltd.
Valparaiso, 12 brls.	Balfour
	Williamson
Molasses—	
N. Orleans, 1,200 brls.	R. Crooks
	& Co.
Ochre—	
Rouen, 72 cks.	R. J. Francis & Co.
" 42	Co-op. W'sale
	Society, Ltd.
Alicante, 500 bgs.	
Oxalic Acid—	
Rouen, 12 cks.	
Paint—	
Portland, M., 3 bxs.	Wingate &
	Johnston
Paraffin Scale—	
Baltimore, 1,248 brls.	
Phosphates—	
Ghent, 988 bgs.	

Phosphorus—	
Norfolk, Va., 22 cs.	
Potashes—	
Rouen, 114 cks.	Co-op. W'sale
	Society, Ltd.
Portland, M., 30 brls.	
Dunkirk, 30 dms.	
Pyrites—	
Huelva, 3,323 t.	Matheson & Co.
Rosin—	
Savannah, 2,750 brls.	Muir,
	Duckworth & Co.
" 3,100	
Saltpetre—	
Hamburg, 4 cks. 50 brls. 30 kgs.	
Silver Sulphide—	
Valparaiso, 7 bgs.	Hainsworth
	Watson
Soap—	
New York, 170 bxs.	R. Crooks
	& Co.
Boston, 4 cs.	Barclay & Co.
Soda—	
New York, 2 kgs.	
Sodium Nitrate—	
Pisagua, 1,900 t.	G. C. Dobell
	& Co.
C'leta Buena, 16,019 bgs.	
Starch—	
Hamburg, 308 cs.	
Rouen, 171	J. T. Fletcher
Ghent, 41 cs.	& Co.
Stearine—	
Rouen, 13 bls.	
Tallow—	
New York, 120 tcs.	
Tartar—	
Bordeaux, 5 cks.	
Tartaric Acid—	
Rouen, 4 cks.	
Bordeaux, 1 cs.	
Wood Pulp—	
Rouen, 104 bls.	
Zinc Oxide—	
New York, 269 brls.	
Rouen, 10 cks.	

MANCHESTER.

Week ending March 23rd.

Alkali—	
Rouen, 8 cks.	
Aluminous Cake—	
Rouen, 40 bgs.	
Ammonium Carbonate—	
Hamburg, 3 kgs.	
Antimony—	
Antwerp, 5 brls.	
Arachide Oil—	
Rouen, 10 cks.	
Barytes—	
Bremen, 200 bgs.	W. Harrison
	& Co.
Antwerp, 40	
Chemicals (otherwise undescribed)	
Rouen, 22 cks.	
Chrome Alum—	
Rouen, 5 cks.	
Colours—	
Rouen, 29 cks. 39 cs. 7 bxs.	
Ghent, 12 brls.	
Antwerp, 4	1 21
Hamburg, 4	1
Dyestuffs—	
Logwood	
Laguna, 420 t.	E. Brownbill
	& Co.
Farina—	
Hamburg, 1,274 bgs.	
Glue—	
Rouen, 61 bls. 98 cks. 1 bg.	
Lead Acetate—	
Hamburg, 17 cks.	
Limestone—	
Antwerp, 2 crts.	
Minium—	
Rouen, 7 cks.	
Ochre—	
Rouen, 29 cks.	
Pitch—	
Rouen, 25 cks.	
Potash—	
Rouen, 30 brls.	
Rouen, 3 cks.	

Starch—	
Rouen, 50 cs.	
Antwerp, 208	
Stearine—	
Antwerp, 6 bgs.	
Tartar Emetic—	
Hamburg, 8 cks.	
Tartaric Acid—	
Rouen, 2 cks.	
Wood Pulp—	
Christiania, 1,375 bls.	
Drammen, 750	
Frederickshald, 5,026	

HULL.

Week ending March 23rd.

Acetate of Lime—	
New York, 1,613 bgs.	Wilson, Sons,
	& Co., Ltd.
Acid—	
Rouen, 1 ck. 20 blns.	
Hamburg, 1	Hutchinson & Son
	Wilson, Sons,
	& Co., Ltd.
Bari, 35 cks.	"
Albumen—	
Hamburg, 40 cs.	Wilson,
	Sons, & Co., Ltd.
Barytes—	
Bremen, 24 cks.	Veltmann
	& Co.
Antwerp, 23	Johnson Bros.
	H. F. Pudsey
Bitro Toluol—	
Rouen, 13 cks.	W. & C. L.
	Ringrose
Bone Meal—	
Bombay, 1,000 bgs.	
Kurrachee, 3,000	
Camphor—	
Hamburg, 2 brls. 7 cks.	Wilson,
	Sons, & Co., Ltd.
Carbolic Acid—	
Amsterdam, 45 cks.	W. & C. L.
	Ringrose
Castor Oil—	
Trieste, 4 cs.	Wilson, Sons,
	& Co., Ltd.
Chemicals (otherwise undescribed)	
Hamburg, 20 cks.	Wilson, Sons,
	& Co., Ltd.
Dunkirk, 17	"
Cod Oil—	
Hamburg, 66 brls.	J. Deheer
	& Sons
Colours—	
Ghent, 7 brls.	Wilson, Sons,
	& Co., Ltd.
Rouen, 20 cs. 1	6 cks. 35 pks.
	Hutchinson & Son
" 7 pkgs.	Wilson, Sons,
	& Co., Ltd.
Antwerp, 6 cks. 10 cs.	Bailey &
	Leatham
Rouen, 8 pks.	W. & C. L.
	Ringrose
Hamburg, 3 cks.	Blundell,
	Spence, & Co.
Antwerp, 14 pks.	Wilson, Sons,
	& Co., Ltd.
Dyestuffs—	
Alizarine	
Rouen, 114 brls. 3 bxs.	Hutchinson & Son
Argols	
Bari, 11 cks.	Wilson, Sons,
	& Co., Ltd.
Madder	
Rouen, 3 cks.	Hutchinson
	& Son
Myrabolams	
Bombay, 3,087 bgs.	
Shumac	
Trieste, 9 bls.	Wilson, Sons,
	& Co., Ltd.
Farina—	
Ghent, 120 bxs.	Wilson,
	Sons, & Co., Ltd.
Hamburg, 100 bgs	
" 350	W. & C. L.
	Ringrose
" 100	
Haringen, 50	W. & C. L.
	Ringrose
Antwerp, 50	Wilson, Sons,
	& Co., Ltd.

GLASGOW.			GLASGOW.			GLASGOW.		
Sulphuric Acid—			Sulphuric Acid—			Sulphuric Acid—		
Hamburg, 40 cks.			Hamburg, 40 cks.			Hamburg, 40 cks.		
Calais, 27			Calais, 27			Calais, 27		
Alum—			Alum—			Alum—		
Rotterdam, 60 lbs.			Rotterdam, 60 lbs.			Rotterdam, 60 lbs.		
Barytes—			Barytes—			Barytes—		
Rotterdam, 21 cks.			Rotterdam, 21 cks.			Rotterdam, 21 cks.		
Dyestuffs—			Dyestuffs—			Dyestuffs—		
Alizarine			Alizarine			Alizarine		
Rotterdam, 121 cks. 88 pgs.			Rotterdam, 121 cks. 88 pgs.			Rotterdam, 121 cks. 88 pgs.		
Extracts			Extracts			Extracts		
Rouen, 40 cks.			Rouen, 40 cks.			Rouen, 40 cks.		
Ghent, 25			Ghent, 25			Ghent, 25		
Logwood			Logwood			Logwood		
Belize, 434 t.			Belize, 434 t.			Belize, 434 t.		
Antigua, 246			Antigua, 246			Antigua, 246		
Madder			Madder			Madder		
Rotterdam, 13 cks.			Rotterdam, 13 cks.			Rotterdam, 13 cks.		
Dyestuffs (otherwise indicated)			Dyestuffs (otherwise indicated)			Dyestuffs (otherwise indicated)		
Rotterdam, 26 pgs.			Rotterdam, 26 pgs.			Rotterdam, 26 pgs.		
Boulogne, 25			Boulogne, 25			Boulogne, 25		
Farina—			Farina—			Farina—		
Hamburg, 100 lbs.			Hamburg, 100 lbs.			Hamburg, 100 lbs.		
Delfsryhl, 1,060			Delfsryhl, 1,060			Delfsryhl, 1,060		
Antwerp, 10			Antwerp, 10			Antwerp, 10		
Glucose—			Glucose—			Glucose—		
Hamburg, 10 cks.			Hamburg, 10 cks.			Hamburg, 10 cks.		
Calais, 200 lbs.			Calais, 200 lbs.			Calais, 200 lbs.		
Guano—			Guano—			Guano—		
Kroksholm, 91 t.			Kroksholm, 91 t.			Kroksholm, 91 t.		
Phosphate—			Phosphate—			Phosphate—		
Ghent, 2,412 lbs.			Ghent, 2,412 lbs.			Ghent, 2,412 lbs.		
Potash—			Potash—			Potash—		
Rotterdam, 12 cks.			Rotterdam, 12 cks.			Rotterdam, 12 cks.		
Calais, 7 pgs.			Calais, 7 pgs.			Calais, 7 pgs.		
Dunkirk, 6			Dunkirk, 6			Dunkirk, 6		
Pyrites—			Pyrites—			Pyrites—		
Seville, 1,300 t.			Seville, 1,300 t.			Seville, 1,300 t.		
Saltpetre—			Saltpetre—			Saltpetre—		
Hamburg, 21 cks.			Hamburg, 21 cks.			Hamburg, 21 cks.		
Rotterdam, 25 lbs.			Rotterdam, 25 lbs.			Rotterdam, 25 lbs.		
Tartaric Acid—			Tartaric Acid—			Tartaric Acid—		
Rotterdam, 2 bbls.			Rotterdam, 2 bbls.			Rotterdam, 2 bbls.		
Zinc Oxide—			Zinc Oxide—			Zinc Oxide—		
Rotterdam, 6 cks.			Rotterdam, 6 cks.			Rotterdam, 6 cks.		
GRIMSBY.			GRIMSBY.			GRIMSBY.		
Week ending March 27th.			Week ending March 27th.			Week ending March 27th.		
Caoutchouc—			Caoutchouc—			Caoutchouc—		
Antwerp, 1 bbl.			Antwerp, 1 bbl.			Antwerp, 1 bbl.		
Hamburg, 3			Hamburg, 3			Hamburg, 3		
Coal Tar Dyes—			Coal Tar Dyes—			Coal Tar Dyes—		
Hamburg, 3 pgs.			Hamburg, 3 pgs.			Hamburg, 3 pgs.		
Antwerp, 54			Antwerp, 54			Antwerp, 54		
Colours—			Colours—			Colours—		
Antwerp, 16 pgs. 4 cks.			Antwerp, 16 pgs. 4 cks.			Antwerp, 16 pgs. 4 cks.		
Farina—			Farina—			Farina—		
Hamburg, 100 lbs.			Hamburg, 100 lbs.			Hamburg, 100 lbs.		
Pitch—			Pitch—			Pitch—		
Dieppe, 10 cks.			Dieppe, 10 cks.			Dieppe, 10 cks.		
Starch—			Starch—			Starch—		
Antwerp, 14 cks.			Antwerp, 14 cks.			Antwerp, 14 cks.		
Zinc Ashes—			Zinc Ashes—			Zinc Ashes—		
Antwerp, 7 cks.			Antwerp, 7 cks.			Antwerp, 7 cks.		

EXPORTS OF CHEMICAL PRODUCTS

OF

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.			Yokohama,			Antigua,			Borax—		
Week ending March 27th.			Ammonium Chloride—			Rotterdam,			Hamburg,		
Alkali—			Bagdad, 10 c.			Bremen, 100			Cleveland Bay, 3		
Rockhampton, 3 t. 2 c.			Sydney, 6 t. 18			Sydney, 50 clydra.			Adelaide, 26 t.		
Hamburg, 6			Hio, 1 10			Rotterdam, 5			Carbon Bisulphide—		
Cape Town, 7			Ammonium Sulphate—			Arsenic—			Brisbane, 18 cks.		
Alum—			Hamburg, 50 t.			Wellington, 1 t. 10 c.			Caustic Soda—		
Greymouth, 1 c.			Dunkirk, 150			B. Ayres, 8 10			Natal, 17 t.		
Ammonium Carbonate—			Cullera, 80			Barium Sulphate—			Sanon, 5 t. 18		
Adelaide, 1 t.			Ostend, 55			Leghorn, 35 cks.			Sydney, 20		
Hio, 20 t.			Ghent, 50						Dumelin, 10		
			Nevia, 5						Algar Bay, 2 10		

(otherwise undes.)—

19 c.	£78
1 t. 4	38
1 cs. 17	17
4 15	51
5 260	260
13	13
5 brls. 47 pkgs. 20	65
51 kgs. 82	82
40 pkgs. 20	20
2 c.	£12
11	61
10 kgs. 5	93
1	7
5	32
5	34
1 t.	105
3	91
10	60
62 kgs.	£224
2 cs.	£15
2 cks.	18
2 cks.	44
10 drs.	£250
48	1,300
93 cks.	£450
60 cks.	£283
10	150
40 puns. 18 pipes	£395
100 cks.	238
4 cks.	£19
160 drs.	374
130	303
100 cans	109
5 cs.	29
3 cks.	36
3 cs.	£125
94	94
23,500 galls.	£123
696 bgs.	£88
20 drs.	£8
54	31
7 cs.	30
86 cks.	£95
722 bgs.	£119
20 brls.	£18
668 bgs.	128
510 t.	803
300 cks.	350
860 t.	1,586
20 brls.	£20
50	12
500 drs.	31
1,026 pkgs.	12
100 puns.	73
100 drs.	18
297 brls.	150
18 puns. 25 runs.	£162
20 drs.	£20
200 30 brls.	75
1 t.	£15
25	370
5	75
24	375
10	160
5 2 c.	76
2 cs.	£41
6 t. 15 c.	£437
3	12
4	13
8 c.	£10
16 drs.	11
25 cks.	125
42 pkgs.	70
11 cs.	51
100 dms.	35
10 c.	30
41 cs. 19	118
10 cks.	50
100 t.	£1,000

Manure—

Rouen,	151 t.	£54
Trinidad,	60	630
Delagoa Bay,	2	26
Demerara,	25	281
Genoa,	25	160
Havre,	25	100
Bordeaux,	19 18 c.	50
Gothenburg,	162 11	392
Rocheport,	130	495
Cherbourg,	165	565
Townsville,	13 8	200

Nitric Acid—

Jersey,	20 carbys.	£40
---------	------------	-----

Oxalic Acid—

Hiogo,	10 c.	£18
--------	-------	-----

Phosphate—

Martinique,	50 t.	£194
-------------	-------	------

Phosphorus—

Otago,	10 cs.	£98
Melbourne,	24 9 c.	104
Sydney,	24	229

Potash—

Napier,	2 c.	£17
Treport,	6 t. 8	200

Potassium Bicarbonate—

Yokohama,	1 t.	£28
Hiogo,	10 c.	44

Potassium Chlorate—

Madrid,	1 ck.	£15
Melbourne,	5 c.	11
Shanghai,	1 t. 2	41

Potassium Cyanide—

Cleveland Bay,	5 cs.	£37
Delagoa Bay,	5 c.	23

Potassium Prussiate—

Stettin,	6 c.	£25
Hamburg,	2 cks.	48
Genoa,	2	38

Saltpetre—

Oporto,	1 t. 9 c.	£31
Sydney,	2 10	58
Adelaide,	3 5	75
Melbourne,	3 10	79

Sheep Dip—

New York,	350 cs.	£700
B. Ayres,	1,500	4,725

Soda—

Shanghai,	1 t. 13 c.	£6
-----------	------------	----

Soda Alkali—

Auckland,	18 c.	£7
-----------	-------	----

Soda Ash—

Santos,	5 t. 11 c.	£22
---------	------------	-----

Sodium—

Melbourne,	1 cs.	£10
Brisbane,	2	21

Sodium Bicarbonate—

Townsville,	1 t.	£7
Libau,	1	8
Brisbane,	2 10 c.	16
M. Video,	1	7

Sodium Silicate—

Auckland,	5 t. 1 c.	£26
-----------	-----------	-----

Sodium Tartrate—

Melbourne,	5 cs.	£15
------------	-------	-----

Strontium Nitrate—

Yokohama,	10 c.	£14
-----------	-------	-----

Sulphuric Acid—

Singapore,	1 t. 5 c.	£13
------------	-----------	-----

Superphosphate—

Trinidad,	148 t. 10 c.	£891
Cullera,	20	50
Martinique,	310	1,394

Tartaric Acid—

Hiogo,	15 c.	£70
Yokohama,	1 t. 2	93
Melbourne,	1 5	117
Brisbane,	15	69
Adelaide,	3 15	353

LIVERPOOL.

Week ending March 27th.

Albumen—

Vera Cruz,	19 c.	£21
------------	-------	-----

Alum—

Talcahuano,	2 t. 19 c. 2 q.	£13
Portland, M.,	2 3 1	13
Oporto,	4	20
Galatz,	2 13	11
Syria,	2 16	12

Ammonia—

Antofagasta,	3 c. 2 q.	£10
--------------	-----------	-----

Ammonium Carbonate—

M. Video,	1 t.	£34
Rouen,	1 10 c.	48

Ammonium Chloride—

Varna,	9 c.	£12
Syria,	10	19

Havre,	7 t. 7	182
Smyrna,	18	33
Alexandria,	1	36
Marseilles,	1 10	55
Montreal,	1	23
Genoa,	3 19 1 q.	68
Bourgas,	19	34

Ammonium Sulphate—

Hamburg,	30 t.	£340
New York,	20	246
Las Palmas,	30 2 c. 2 q.	359
Samarang,	31 15 1	396
Tagal,	45 9	650
Genoa,	9 17	112
Valencia,	216 14 1	2,472

Antimony—

Santiago,	1 ck.	
Vera Cruz,	3	

Asbestos—

Opobo,	1 cs.	
Rio de Janeiro,	2	

Bleaching Powder—

Baltimore,	115 cks.	
Bombay,	7	
Boston,	954	
Dunkirk,	18	
Genoa,	80	
Ghent,	67	
Hamburg,	281	
Havana,	8	
Messina,	14	
Naples,	31	
Newport News,	300	54 brls.
New York,	377	86
Pasages,	3	
Philadelphia,	100	25
Rouen,	29	
San Sebastian,	28	
San Francisco,	50	
Syria,	4	
Vera Cruz,	34	

Boracic Acid—

Rotterdam,	1 t. 16 c.	£61
New York,	50 cks.	165
Boston,	2 t.	60
Genoa,	19 3 q.	30

Borax—

Algoa Bay,	10 t.	£200
Adelaide,	17 c. 2 q.	18
Constantinople,	1 4	24
Genoa,	2	40
Rotterdam,	22 1 3	427
Hamburg,	1 7 3	28

Calcium Chloride—

New York,	10 t. 3 c.	£22
-----------	------------	-----

Caoutchouc—

Rio de Janeiro,	1 cs.	
-----------------	-------	--

Carbolic Acid—

M. Video,	3 c. 3 q.	£12
Rotterdam,	5 t. 5	238
E. London,	1	10
Hamburg,	7 2	359
Rouen,	2	102
Rosario,	5	18
Baltimore,	14 cs.	78

Caustic Potash—

Baltimore,	6 t. 10 c.	£156
------------	------------	------

Caustic Soda—

Adelaide,	38 dms.	
Algoa Bay,	19	20 cks.
Amsterdam,	22	
Ancona,	65	
Antwerp,	7	
Aracaju,	10	
Bahia,	60	
Baltimore,	350	
Barcelona,	292	
Bari,	46	
Boston,	100 100 brls.	
Cadiz,	5 14	
Calcutta,	33	
Catania,	75	
Chicago,	100	
Cincinnati,	54	
Corunna,	20	
Galatz,	94	
Genoa,	347	
Hamburg,	95	
Havana,	40	
Hiogo,	340	
Ibrail,	70	
Kurrachee,	20	
Leghorn,	146	
Lisbon,	50	
Malaga,	87	
Malta,	60	
Manaos,	5	
Melbourne,	37	
Messina,	25	
Milwaukee,	100	
M. Video,	50	
Montreal,	5	
Nagasaki,	100	
Naples,	73	

Newp't News, 1,096

N. Orleans, 30

New York, 800 110 60 kgs.

Odessa, 150

Oporto, 49

Paysandu, 50

Pernambuco, 100

Philadelphia, 170 50 cks.

Quebec, 55

Rio de Janeiro, 35

Rouen, 83

Salaverry, 18

Samarang, 13

Santander, 15 pkgs.

Santos, 98

Sarragossa, 17

Savanna, 52

Seville, 234 549

Shanghai, 4

Sourabaya, 35

Sydney, 30 cs 75

Talcahuano, 50

Tampico, 80

Trieste, 10

Valencia, 200 10

Varna, 15

Vera Cruz, 1 cs. 18

Chemicals (otherwise undescribed)

Rotterdam, 1 t. 3 c. £45

Philadelphia, 12 17 425

Samsoun, 4 7

Genoa, 6 11

Ancona, 17 31

Genoa, 10 kgs. 89

Rio de Janeiro, 1 37

Gijon, 10 18

Hamburg, 10

China Clay—

Barcelona, 11 t.

Bombay, 103 18 c.

Boston, 534

Lisbon, 10

Maranham, 1

Portland, M., 60 cks.

Rio de Janeiro, 40

Chloroform—

Vera Cruz, 3 cs.

Coal Products—**Alizarine**

Bombay, 1 ck.

Aniline Colours

Calcutta, 3 cs.

Shanghai, 40

Aniline Salts

Brisbane, 20 cs.

New York, 12 cks.

Piraeus, 10

Smyrna, 10 15 brls.

Naphtha

Piraeus, 3 dms.

Naphthaline Colours

New York, 4 cks.

Pitch

Galatz, 70 brls.

Tar

Barcelona, 1 dm

Callao, 20

Galatz, 120 brls. 25 rnlts

Philadelphia, 200

St. John's, N'd., 70

Tar Salts

New York, 20 cks.

Cobalt Oxide—

Antwerp, 3 c. £55

Copperas—

Syria, 2 t. 14 c. £5

Copper Sulphate—

Naples, 26 t. 19 c. 2 q. £400

Ancona, 21 9 1 313

Sodium Bicarbonate—			Sodium Chlorate—		
Alicante,	150 kgs		Seville,	2 cks	2 bbls
Ancona,	50	1 cks	Sodium Chloride—		
Antofagasta,	5		Amsterdam,	100 kgs	
Antwerp,	11		Hamburg,	20	1 dm.
Baltimore,	500	25	Sodium Oxide—		
Barcelona,	105		New York,	1 cks	
Bari,			Sodium Silicate—		
Bluefields,	20		Corunna,	4 bbls	
Bourgas,	200		Sulphur—		
B. Ayres,	80		Portland, Me.,	2 t. 27 1/2	18
Calamata,	80		Boston,	175	1
Genoa,	20		Philadelphia,	120	3
Gusyaquil,	170	6	Sulphuric Acid—		
Hamburg,	100		Maceio,	10 c	
Kingston, Jam.,	100		Savanilla,	10	
London, Ont.,	50	1	Superphosphate—		
Malta,	7		Valencia,	60 t.	
Marseilles,	47		Gd. Canary,	10	
Naples,	30		Las Palmas,	8	10 c
Newport News,	225	75	Tin Crystals—		
New York,			Trinidad,	1 t. 21 c.	
Odessa,	150		Treacle—		
Patras,	20		Amsterdam,	95 bbls	4 1/2
Philadelphia,	240		Ghent,	10	
Portland, Me.,	10		Malta,	30 cks	
Rosario,	120		Rotterdam,	25 cks	
Rouen,	30		Turpentine—		
San Juan,	37		Salonica,	2 bbls	
Seville,	50		Ultramarine—		
Smyrna,	40		Rangoon,	10 cks	
Varna,	25		Varnish—		
Sodium Bichromate—			Calcutta,	10 dm.	
Seville,	2 cks	2 bbls	Galatz,	4 cks	
Sodium Chlorate—			Genoa,	4	
Amsterdam,	100 kgs		Halifax,	1	
Hamburg,	20	1 dm.	Lima,	3	
Sodium Oxide—			Odessa,	2	
New York,	1 cks		Oporto,	2	
Sodium Silicate—			Panama,	5	
Corunna,	4 bbls		Puerto Cabello,	1	
Sulphur—			Smyrna,	10	
Portland, Me.,	2 t. 27 1/2	18	Sourabaya,	1	30
Boston,	175	1	White Lead—		
Philadelphia,	120	3	Puerto Cabello,	90 kgs	
Sulphuric Acid—			Zinc Chlorate—		
Maceio,	10 c		Colombo,	5 t. 12 c.	14
Savanilla,	10		Zinc Chloride—		
Superphosphate—			Bombay,	30 t. 2 1/2	6
Valencia,	60 t.		Zinc White—		
Gd. Canary,	10		Parnahya,	2 cks	
Las Palmas,	8	10 c			
Tin Crystals—			MANCHESTER		
Trinidad,	1 t. 21 c.		Week ending March 27		
Treacle—			Albumen—		
Amsterdam,	95 bbls	4 1/2	Antwerp,	2 cks	
Ghent,	10		Alkali—		
Malta,	30 cks		Antwerp,	10 cks	
Rotterdam,	25 cks		Hamburg,	1 kg.	
Turpentine—			Ammonium Carbonate—		
Salonica,	2 bbls		Antwerp,	20 kgs	
Ultramarine—			Rotterdam,	20	
Rangoon,	10 cks		Aniline Oil—		
Varnish—			Antwerp,	12 dm.	
Calcutta,	10 dm.				
Galatz,	4 cks				
Genoa,	4				
Halifax,	1				
Lima,	3				
Odessa,	2				
Oporto,	2				
Panama,	5				
Puerto Cabello,	1				
Smyrna,	10				
Sourabaya,	1	30			
White Lead—					
Puerto Cabello,	90 kgs				
Zinc Chlorate—					
Colombo,	5 t. 12 c.	14			
Zinc Chloride—					
Bombay,	30 t. 2 1/2	6			
Zinc White—					
Parnahya,	2 cks				
MANCHESTER					
Week ending March 27					
Albumen—					
Antwerp,	2 cks				
Alkali—					
Antwerp,	10 cks				
Hamburg,	1 kg.				
Ammonium Carbonate—					
Antwerp,	20 kgs				
Rotterdam,	20				
Aniline Oil—					
Antwerp,	12 dm.				

2 pos.	(otherwise undes.)	—
50 bgs.		
28 cks.		
6 brls.		
1 cs.		
6 cks.		
112 t.		
10 dms.		
20		
20		
2 brls.		
HULL.		
ending March 23rd.		
25 kgs.		
200 cks.		
150		
Sulphate		
619 bgs.		
478		
45 cks.		
Powder		
40 dms.		
91 cks.		
33		
70		
1 cs.		
1 ck		
old		
210 cks.		
ia		
90 dms.		
8 kgs.		
(otherwise undescribed)		
10 cks. 6 pkgs. 36 cs.		
10		
1,200	20 kgs.	
ple, 60		
13	53	1 cs.
	12	30
36		
29	5	10.
275	35	1
13		
10		5
101		
Oil		
440 c.		
118		
63		
65		
50		
1,954		
529		
103		
40		
2,112		
(otherwise undescribed)		
5 dms.		
8	17 cs.	
25 t.		
80 c.		
60		
284		
ple, 35		
od, 52		
425		
93		
176		
20		
52		
1,324 bgs.		
White		
30 bgs.		
26 cks.		
2 cks.		
4		

Paint		
Copenhagen,	1 cs.	
Painters' Colours		
Antwerp,	69 cks. 1 cs.	1 pkge.
Amsterdam,		1
Bergen,	5	
Bombay,	23 98	714 kgs.
Christiansund,	1	444 pkgs.
Copenhagen,	4	20 dms.
Drontheim,	11	394
Ghent,	77	1
Genoa,	8	10
Hamburg,	20	
Harlingen,	3	
Leghorn,	15	
Marseilles,	22	1 bx
Naples,	1	48 kgs.
New York,	180	
Odessa,	20	
Rotterdam,	8	
Rouen,	29	
Phosphorus		
Naples,	2 cs.	
Pitch		
Antwerp,	415 t.	
Naples,	268	
Rotterdam,	181	
Sheep Dip		
Bombay,	220 dms. 8 cks.	
Soap		
Christiania,	1 cs.	
Copenhagen,	1	
Drontheim,	40	
Hamburg,	1	
Soda Ash		
Naples,	22 cks.	
Starch		
Copenhagen,	80 cs.	
Tallow		
Rotterdam,	30 cks.	
Tar		
Amsterdam,	20 cks.	
Bergen,	2	
Drontheim,	5	
Zelzatt,	115 t.	
Tar Oil		
Bremen,	50 brls.	
Terra Alba		
New York,	45 t.	
Turpentine		
Bergen,	2 cks.	
Bombay,	60 dms.	
Varnish		
Antwerp,	9 cks.	
Amsterdam,	18	
Bombay,	70 dms.	
Copenhagen,	2	3 cs.
Gothenburg,		4
Ghent,	1	8
Marseilles,	4 bxs.	
Whiting		
New York,	73 cks.	

GLASGOW.

Week ending March 28th.

Albumen		
U.S.A.,	2 t.	5 3/4 c.
Ammonia		
Hamburg,	35 t.	10 c.
Ammonium Sulphate		
Nickerie,	15 t.	9 3/4 c.
Demerara,	218	7
Boric Acid		
Rotterdam,		6 c.
Caoutchouc		
Huelva,		
Carbolic Acid		
Rotterdam,	54 t.	
Coal Products		
Aniline Colours		
U.S.A.,		6 1/2 c.
Benzol		
Rotterdam,		
Pitch		
Canada,	69 t.	5 1/2 c.
Madras,	50 cks.	15 rnlts
Christiania,	12	5
Hamburg,	51	2
Coronel,	13	15
Penang,	40 brls.	
Tar		
Calcutta,	569 rnlts.	
Madras,	220	
U.S.A.,	24 t.	15 c.
Manila,	40 cks.	
Penang,	100	205 brls.
Singapore,		100

Coal Tar Products (otherwise un-		
described)		
Rotterdam,	18 t.	
Cottonseed Oil		
Manila,		£90
Gelatine		
Canada,	619 lbs.	
Glue		
Canada,	10 1/2 c.	
Iodine		
Rotterdam,	5 3/4 c.	
Linseed Oil		
RioGrande do Sul,	1 t.	7 1/2 c.
Canada,	10	16 1/2
Singapore,	2	5 1/2
Magnesium Sulphate		
Christiania,	5 t.	
Manure		
Trinidad,	3 t.	1 c.
Paint		
Barbadoes,		£91
E. London,		21
M. Video,		27
Rio Grande do Sul,		92
Valparaiso,		26
Manila,		35
Philippine Is.,		285
Yloilo,		46
Singapore,		103
Painters' Colours		
Cape Town,		£55
Durban,		86
U.S.A.,		37
Paraffin Wax		
Johannesburg,	23 t.	3 c.
Danzig,	3	8
Lisbon,	1	
Arendal,	1	1/4
Christiania,	5	
Haipkong,	3	13 1/4
Phosphoric Acid		
Trinidad,	1 t.	13 c.
Potash Salts		
Tampico,	4 t.	6 c.
Potassium Bichromate		
U.S.A.,	14 t.	2 1/4 c.
Philadelphia,	8	11 1/4
Hiojo,		
Christiania,	4	12
Slag		
Rotterdam,	444 t.	
Soap		
Grenada,	2 t.	13 1/2 c.
St Lucia,	1	13 1/4
Valparaiso,		2 1/2
Demerara,	5	
Soda Ash		
U.S.A.,	25 t.	
Tallow		
Manila,		£25
Treacle		
Rotterdam,	9 t.	3 c.
Christiania,	36	6
Turpentine		
Philippine Is.,		£52
White Lead		
Cape Town,	3 t.	11 c.
Calcutta,	1	10

TYNE.

Week ending March 23rd.

Alkali		
Christiania,	6 t.	10 c.
Rotterdam,	5	11
Amsterdam,	31	14
Bergen,	2	19
Alum Waste		
Genoa,	10 t.	2 c.
Antimony		
Hamburg,	2 t.	
Rotterdam,	2	10 c.
Arsenic		
Genoa,	2 t.	14 c.
Barium		
Antwerp,	5 t.	3 c.
Bleaching Powder		
Antwerp,	61 t.	
Hamburg,	14	4 c.
Hango,	57	7
Rotterdam,	13	18
Esbjerg,	6	12
Trondhjem,	10	
Amsterdam,	47	14

Caustic Soda		
Antwerp,	7 t.	10 c.
Hamburg,	5	11
Stavanger,		17
Colours		
Genoa,	1 t.	4 c.
Litharge		
Hamburg,	3 t.	11 c.
Magnesia		
Hamburg,	2 t.	3 c.
Leghorn,		8
Paint		
Antwerp,		9 c.
Hamburg,	1 t.	
Genoa,	1	5
Christiania,		16
Bergen,	4	glns.
Plumbago		
Ergasteria,		1 c.
Saltpetre		
Frederikshavn,	5 t.	2 c.
Slag		
Rotterdam,	85 t.	
Soap		
Ergasteria,	42 lbs.	
Soda		
Antwerp,	5 t.	2 c.
Hango,	10	
Christiania,	12	14
Rotterdam,	12	
Esbjerg,	32	6
Trondhjem,	5	
Genoa,	11	14
Amsterdam,	26	16
Bergen,	3	5
Soda Ash		
Antwerp,	6 t.	10 c.
Rotterdam,	5	2
Turpentine		
Antwerp,	8	glns.
Varnish		
Bergen,	3	glns.
White Lead		
Christiania,	1 t.	1 c.

GOOLE.

Week ending March 20th.

Benzol		
Boulogne,	24 cks.	
Hamburg,	192	
Rotterdam,	72	
Chemicals (otherwise undescribed)		
Dunkirk,	15 cks.	
Rotterdam,	23	
Coal Products (otherwise undes.)		
Boulogne,	51 cks.	
Rotterdam,	4	6 cs.
Ghent,	1	1
Hamburg,	3	1
Dyestuffs (otherwise undescribed)		
Hamburg,	104 cks.	
Manure		
Boulogne,	43 bgs.	
Bruges,	497	
Dunkirk,	196	
Ghent,	50	
Painters' Colours		
Hamburg,	17 pkgs.	
Rotterdam,	1 cs.	
Pitch		
Antwerp,	564 t.	
Dunkirk,	200	
Rotterdam,	56	
GRIMSBY.		
Week ending March 23rd.		
Chemicals (otherwise undescribed)		
Hamburg,	21 pkgs.	1 ck.
Coal Products (otherwise undes.)		
Dieppe,	132 cks.	1 cs.
Rotterdam,		3
Painters' Colours		
Antwerp,	2 cs.	
Dieppe,	1 ck.	
Hamburg,	1	
Rotterdam,	3	

PRICES CURRENT.

WEDNESDAY, APRIL 3rd.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may

Acids:—		£	s.	d.
Acetic, 25% and 40%	per cwt.	6/6	&	9/6
Glacial				40/-
Arsenic S.G., 2000		0	15	0
Fluoric	per lb.	0	0	3 3/4
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0	10
(Cylinder), 30° Tw.		0	3	0
Nitric 80° Tw.	per lb.	0	0	1 1/2
Nitrous		0	0	1 1/4
Oxalic	nett	0	0	3 1/4
Phosphoric, 1750°		0	0	11
Picric		0	0	10
Sulphuric (fuming 30%)	per ton	15	10	0
(monohydrate)		5	10	0
(Pyrites, 168°)		3	0	0
(free from arsenic, 145°)		1	5	0
Sulphurous (solution) S.G. 1025		3	0	0
Tannic (pure)	per lb.	0	1	0
Tartaric		0	0	10 1/4
Arsenic, white powdered	nett per ton	14	15	0
Alum (loose lump)		4	15	0
Alumina Sulphate (pure)		4	12	6
Aluminoferrous		2	7	6
Aluminium	per lb.	0	3	0
Ammonia, Anhydrous		0	1	3
" 880 = 28° B.	per lb.	0	0	3
" = 24° B.		0	0	2 1/4
" Carbonate	nett	0	0	3 1/4
" Muriate	per ton	22	10	0
" (sal-ammoniac) 1st & 2nd	per cwt.	39/-	&	37/-
" Nitrate	per ton	40	0	0
" Phosphate	per lb.	0	0	8 1/2
" Sulphate (grey) London	per ton	10	12	6
" (grey) Hull		10	12	6
Aniline Oil (pure)	per lb.	0	0	5 1/4
Aniline Salt		0	0	4 1/4
Antimony	per ton	31	10	0
" (tartar emetic)	per lb.	0	0	7 1/2
" (golden sulphide)		0	0	10
Barium Chloride	per ton	6	10	0
" Carbonate (native)		3	5	0
" Sulphate (native levigated)		45/-	to	75/-
Bleaching Powder, 35%	nett	7	0	0
" Liquor, 7%		3	10	0
Bisulphide of Carbon		11	0	0
Chromium Acetate (crystal)	per lb.	0	0	6
Calcium Chloride	per ton	2	2	6
China Clay (at Runcorn) in bulk		15/-	to	30/-
Coal Tar Products and Dyes:—				
Alizarine (artificial) 20%	net per lb.	0	0	8
Magenta		0	3	9
Anthracene, 30% A, f.o.b. London	per unit per cwt.	0	1	1
Benzol, 90% nominal	per gallon	0	1	1 1/2
50/90		0	1	1
Carbolic Acid (crystallised 40°)	per lb.	0	0	6
(crude 60°)	per gallon	0	1	6 1/2
Creosote (ordinary)		0	0	2
(filtered for Lucigen light)		0	0	2
Crude Naphtha 30% @ 120° C.		0	0	5
Grease Oils, 22° Tw.	per ton	2	10	0
Pitch, f.o.b. Liverpool or Garston		1	13	0
Solvent Naphtha, 90% at 160°	per gallon	0	1	2
Lucigen and "Wells" Oils		0	0	2 1/2
Copper	per ton	39	10	0
" Sulphate		15	5	0
" Oxide (copper scales)		39	0	0
Glycerine (crude)		16	10	0
(distilled S.G. 1250°)	nett, per oz.	45	0	0
Iodine		0	0	9
Iron Sulphate (copperas)	per ton	1	5	0
" Sulphide (antimony slag)		2	0	0
Lead (sheet) for cash		11	5	0
" Litharge Flake (ex ship)		13	5	0
" Acetate (white)		24	10	0
" brown		14	10	0
" Carbonate (white lead) pure		16	0	0
" Nitrate		18	15	0
Lime, Acetate (brown)	per ton	5	1	0
" (grey)		3	2	0
Magnesium (ribbon and wire)	per oz.	0	0	0
" Chloride (ex ship)	per ton	2	0	0
" Carbonate	per cwt.	1	1	0
" Hydrate	per ton	17	0	0
" Sulphate (Epsom Salts)	per ton	3	0	0
Manganese, Sulphate		17	0	0
" Borate	per cwt.	2	10	0
" Ore, 70%	per ton	4	0	0
Methylated Spirit, 61° O.P.	per gallon	0	1	0
Naphtha (Wood), Solvent		0	0	0
" Miscible, 60° O.P.		0	0	0
Oils:—				
Cotton-seed	per ton	17	10	0
Linseed		21	0	0
Petroleum, American	per gallon	0	0	0
Stearine	per ton	25	10	0
Phosphorus (yellow)	per lb.	0	0	0
" (red)		0	0	0
Potassium (metal)	per oz.	0	0	0
" Bichromate	nett	0	0	0
" Carbonate, 90% (ex ship)	per ton	16	10	0
" Chlorate	per lb.	0	0	0
" Cyanide, 98%		0	0	0
" Hydrate (Caustic Potash) 80/85%	per ton	21	0	0
" (Caustic Potash) 75/80%		19	10	0
" (Caustic Potash) 70/75%		19	10	0
" Nitrate (refined)	per cwt.	1	1	0
" Permanganate	per cwt.	2	10	0
" Prussiate Yellow	per lb.	0	0	0
" Sulphate, 90% (ex ship)	per ton	9	0	0
" Muriate, 80% (do.)		8	0	0
Silver (metal)	per oz.	0	0	0
" Nitrate		0	0	0
Sodium (metal)	per lb.	0	0	0
" Carb. (refined Soda-ash) 48%	nett per ton	4	0	0
" (Caustic Soda-ash) 48%		4	0	0
" (Carb. Soda-ash) 48%		4	0	0
" (Alkali) 58%		3	0	0
" (Soda Crystals)		14	0	0
" Acetate (ex-ship)		14	0	0
" Arseniate, 45%		12	0	0
" Chlorate	per lb.	0	0	0
" Borate (Borax)	nett, per ton	18	0	0
" Bichromate	per lb.	0	0	0
" Hydrate (77% Caustic Soda) (f.o.b.) net per ton		19	0	0
" (74% Caustic Soda)		18	0	0
" (70% Caustic Soda)		17	0	0
" (60% Caustic Soda)		16	0	0
" (60% Caustic Soda, cream) (f.o.b.)		16	0	0
" Bicarbonate		6	10	0
" Hypsulphite		5	10	0
" Manganate, 30%		10	0	0
" Nitrate (95%) ex-ship Liverpool	per cwt.	0	0	0
" Nitrite, 98%	per ton	29	0	0
" Phosphate		14	10	0
" Silicate (glass)	per ton	4	10	0
" (liquid, 100° Tw.)		3	10	0
" Stannate, 40%	per cwt.	3	0	0
" Sulphate (Salt-cake)	per ton	0	17	0
" (Glauber's Salts)		1	5	0
" Sulphide		8	0	0
" Sulphite		5	5	0
Strontium Hydrate, 100%		8	10	0
Sulphocyanide Ammonium, 95%	per lb.	0	0	0
" Barium, 95%		0	0	0
" Potassium		0	0	0
Sulphur (Flowers)	per ton	5	15	0
" (Roll Brimstone)		5	0	0
" Brimstone: Best Quality		5	10	0
Superphosphate of Lime (26%)		3	7	0
Tallow		2	10	0
Tin Crystals	per lb.	0	0	0
" English Ingots	per ton	68	0	0
Zinc (Spelter)		13	15	0
" Chloride (solution, 100° Tw.)		5	7	0

THE CHEMICAL TRADE JOURNAL

AND
OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

112.

SATURDAY, APRIL 13, 1895.

Vol. XVI.

Contents.

PAGE	PAGE
Cylinder Explosion	237
Chemical Industry	238
Machine	238
on of Argon	239
Chemistry	240
tution of the Weaver	241
since	241
ce	242
respondents	242
or Wool-sorting	242
onia Products	243
Liverpool Mineral Market	244
Liverpool Oil and Colour Market ..	244
The Metal Market	244
Miscellaneous Chemical Market ..	244
Report on Manure Material	244
West of Scotland Chemicals	245
Tyne Chemical Report	245
Hull Paint, Oil, and Colour Report ..	245
New Companies	245
The Patent List	246
Gazette Notices	246
Imports	246
Exports	249
Prices Current	252

TENDER.

MANCHESTER CORPORATION GAS WORKS.

TO TAR DISTILLERS AND OTHERS.

As Committee are prepared to Receive Tenders for Purchase of the Gas Tar to be produced at their Rochdale-road Gas-works, a period of one, two, or three years, commencing on the 24th June, 1895, the Committee do not bind themselves to accept the highest or any tender, and, addressed to the Chairman of the Gas Committee, and endorsed "Gas Tar," must be delivered at the offices of the Gas Department, 32, Blackfriars Street, Manchester, on or before Thursday, the 18th inst. All other particulars may be obtained on application (in writing) to Charles Nickson, Superintendent of the Gas Department. By order of the Gas Committee.

WM. HENRY TALBOT,
Town Clerk.

Manchester,
April, 1895.

ADVERTISEMENT.

STATE OF SODA.—For Sale small lot of Soda. Must be disposed of. Will take 28s. per cwt.—Address, "R.C.," 138, Blackfriars Street, Manchester.

EXPERIENCED WORKS CHEMIST (age 27) Situation as Assistant Manager, Chemist, or Foreman; has been a well known Analyst. Salary moderate.—Apply, "E.W.," 137, Blackfriars Street, Manchester.

Notices.

Communications for the *Chemical Trade Journal* should be sent by Post Office Orders made payable to—

MRS. BROS., 32, Blackfriars Street, MANCHESTER.

Our Registered Telegraphic Address is—

"Expert, Manchester."

Advertisements.

Advertisements of Situations Vacant, Premises on Sale or To be Let, Wants, and Specific Articles for Sale by Private Contract are published in the *Chemical Trade Journal* at the following rates:—

Words and under

Each additional 10 words

Advertisements, Announcements in the Directory Columns, and all Advertisements, are charged at the Tariff rates, which will be forwarded on

CURRENT TOPICS.

THE OXYGEN CYLINDER EXPLOSION.

THE inquiry upon the explosion at Fenchurch-street has been concluded, but the facts which have been elucidated are not altogether satisfactory when viewed in the light of the rider added by the Coroner's Jury to their verdict.

As will be seen from the report given elsewhere, they recommend the scheduling of the gas as an explosive, Government control of the cylinders, and the licensing of the manufacturers—of the cylinders we suppose, not of oxygen. Now Dr. Dupré distinctly states that the cylinder was quite safe in the matter of strength. Only the neck of the cylinder was blown off, the rest remaining intact. Under the present precautions adopted by makers for testing, and the ease with which steel cylinders can be obtained, there does not appear much need for the jury's remarks about the cylinder *per se*.

The evidence does not clear up the doubt which existed as to the source of the oxygen. At first it was said to have been made from chlorate of potash. Mr. Murray's evidence, however, leaves room for conjecture as to whether it had not been prepared by Brin's process, while Dr. Dupré gives the source or quality of the oxygen no consideration whatever in connection with the explosion. Strange to say, however, although grease was proved to have been found upon the fittings and in the neck of the cylinder, no prominent reference is made to its probable influence upon the explosion, in spite of the danger which is known to attach to its presence; nor is there a particle of evidence to show how it came to be present. The jury take no cognisance of this hiatus, however. Stress is laid by Dr. Dupré on the possibility of the presence of coal gas, and without doubt it is desirable that separate pumps should be used for the two gases. There is also ample scope for a Board of Trade Inquiry, which, if properly conducted, should leave little room for any need of the railways being dragged in. Under the present state of affairs we think the jury would have acted more wisely if they had confined their remarks to separate pumps and a Board of Trade Inquiry, and refrained from expressing an opinion upon the desirability of any specific regulations, until more is known about these explosions and their cause. At Bradford the gas was Brin's and the cylinder decidedly faulty. A review of the evidence which has so far been adduced in connection with explosions of this nature (and there has only been one other) points, however, to greater care being taken in charging, by using separate compressors; for charged cylinders subjected intentionally to all sorts of rough usage cannot be persuaded to explode, though when charged under circumstances which render it impossible to positively state that not a trace of coal gas could be present, they appear to explode on the slightest provocation. At the same time, in this last explosion due allowance must be made for the grease which was present, and its acknowledged dangerous propensities. The upshot

threatens to be a serious check to this industry, unless those interested take steps to establish what's what, in the event of an inquiry being opened by the Board of Trade.

THE WEAVER TRUST.

The settlement of the constitution of this Trust fortunately does not appear likely to be such a lengthy affair after all, as most probably the end of this month will see a consolidation of the Bills which have been promoted by the different interests affected. Some interesting evidence connected with the salt and alkali trades was given during the discussion of the Bills, the result of the Committee's deliberations being virtually a victory for these industries. Instead of 25 independent persons out of 38—10 from the County Council and 15 old trustees—as suggested by the Bill introduced by the Trust, there will be but 22, of whom 10 only will be old trustees, leaving 14 representative members for toll-payers and one each for Winsford and Northwich. There is only one stipulation, which is that not more than 6 representatives out of the 14 shall be given to any individual toll-paying interest. This result appears to have given satisfaction to the two chief opponents of the Trust's Bill, as it leaves toll-payers with an increased representation of 3 upon the Trust Board.

THE OXYGEN CYLINDER EXPLOSION INQUIRY.

At the resumed hearing of this inquiry on Thursday, 4th inst., Mr. Alexander Thomas Clarkson, gas compressor, Bartlett's Buildings, Holborn, said he supplied the iron part of the cylinder, (produced.) It was manufactured by Messrs. Stuart and Clydesdale, of Glasgow, and witness valved it. He ordered the cylinders to be made of mild steel, but he did not test them to see if that was used. The cylinders were afterwards tested by an employee named Abbott, at the works in Phoenix Place, Clerkenwell, when they were filled. The cylinders had to be bored first before the valve could be fixed. That work was done in Scotland, and in order to clear out any grease which might be left in the cylinders from the process, they were placed in a turnace and were heated to about a dull red. He had never used grease to ease the screw with.

Mr. James Spurge, chemical engineer, said he had managed the business for Messrs. Clarkson, at Phoenix Place, between five and six years. He engaged Abbott, but he did not ask him whether he had had any practical chemical experience, as he then had no responsible work to do. Witness cleaned the machines partially once in every three or four months. Abbott proved the cylinders and was supposed to test the gauges every week, witness personally testing them once a month. Abbott also oiled and greased the pumping machines when they did not work properly.

Dr. Dupré said that, in accordance with instructions from the Home Office, he had inquired into the circumstances connected with the explosion.

The Coroner then read Dr. Dupré's report. Dr. Dupré described the process adopted in the preparation of the gas, and said he was of opinion that the quality of the oxygen produced was satisfactory, and need not be taken into consideration in seeking for the cause of the explosion. The report next referred to the method of compressing the oxygen, and mentioned that no grease was allowed to be applied to any fittings of the cylinders or iron reservoirs, both the manager (Mr. Spurge) and the man attending to the compression being fully alive to the danger which might result from grease finding its way into the oxygen bottles. Dr. Dupré then showed that the possibility of coal gas entering the oxygen receiver was not absolutely excluded. Proceeding to describe the exploded cylinder, he said it was what was known as a lap-welded cylinder of about 3½ in. internal diameter and a thickness a little over ½ in. That thickness would be amply sufficient to withstand safely a pressure of 125 atmospheres. With the steel of a tenacity of 30 tons to the square inch it would in fact burst only at a pressure of 427 atmospheres. The inner surface was fairly clean, but at the end on which the valve was, the surface was incrustated with magnetic oxide of iron, which was easily removable, and which under the microscope showed in many places the globular form assumed by the magnetic oxide produced by the burning of iron or steel. The lower end of the brass screw, by means of which the valve fittings were screwed into the bottle, was also incrustated with magnetic oxide of iron, much of which was in the form of small globules produced by fusion at very high temperature. They were evidently fused to the material of

the screw, and it in some cases even slightly pitted the meta magnetic oxide attached to the bottle still contained a trace of fatty material. The brass fitting had been broken off, obvious blow against its upper end. The upper plain part free of the which passed through the stuffing-box, was slightly but ungreasy, the grease having undoubtedly come from the leather stuffing-box. The screw portion on the inner side of the stuff was quite free from grease. The valve itself was also entire. The small hole through which the oxygen escaped contained, in a minute amount of grease similar to that on the upper part valve screw. Here there was a leather washer which had at one time been greased to render it more tight. He had relied on the conclusion, first, that the bottle at the time of the accident contained an explosive gaseous mixture; and that, as that mixture was fired by some portions of finely divided grease igniting in the compressed gas. That some of it actually been on fire in the cylinder the screw sufficiently proved.

The Coroner, in summing up, spoke strongly in favour of a permanent test being imposed with regard to the cylinders; and after deliberating in private, returned the following verdict: "Accidental death, and we, the jury, recommend that all cylinders of an explosive nature should be scheduled under the Explosive Act, that all cylinders should be tested by the Government periodically, no cylinder should be allowed to be used or conveyed about bearing the Government stamp, that all manufacturers should be licensed by the Board of Trade in the future, and that separate pumps should be used in the apparatus for filling the cylinders, also recommend a Board of Trade and Railway inquiry."

SOCIETY OF CHEMICAL INDUSTRY.

MANCHESTER SECTION.

THE annual meeting of the Manchester section of the Society of Chemical Industry was held on Friday, the 5th inst., in the rooms of the Chemical Club, Victoria Hotel, Mr. R. Farley, C.E., chairman of the section, presiding. A committee was elected for the ensuing year, and a number of new rules were discussed and adopted. Mr. F. W. Brookman read a paper on the utilisation of refuse at Rochdale. The method of manufacturing from the refuse a manure for which there is much demand among farmers, a method of dealing with the gases evolved during the process fully explained. Full analyses were given of the two varieties of manure made, of which one contains 13 per cent. and the other 10 per cent. of ammonia. These results, it was explained, were obtained without the addition of any extraneous substances, and the steam heat required for the manufacture of the manure were obtained from the refuse. Destructors, or refuse-burning furnaces, were also dealt with, and results of tests were given which showed that high-pressure steam could readily and economically be obtained from ordinary refuse. The refuse burned per hour in two furnaces was 1 ton; the water evaporated per hour 701 gallons, feed water temperature 53° Fahr., steam pressure 113 lb. per square inch, water evaporated per lb. of refuse burned 1.64 lb. A short discussion followed the reading of the paper.—Mr. R. J. Flintoff read a paper descriptive of experiments on the pink colouration produced during the development of black on cotton.

SCOTTISH SECTION.

THE annual business meeting of this Section took place in the Philosophical Institution, 4, Queen-street, Edinburgh, on the evening of Tuesday, April 2nd. Mr. Robert Irvine, chairman of the section, presided. After reading the minutes of the foregoing meeting, they were confirmed and signed, Mr. J. Stanley Muir, the honorary secretary and treasurer, presented his report on the affairs of the section for the year ending March 31st. The report gave a summary of the work undertaken and carried through by the section, including a general meeting of the society held at Edinburgh in July last. It dealt with the supply of papers read before the section, and it was decided to indicate that the section, substantially, was in a healthy condition since—although the attendance had not been at any time very large—and there had been difficulty with regard to the supply of able papers—the roll of membership during the year had increased in a manner which was effective enough. A close of the financial year of the section, namely, at March 31st, the roll of membership, after deducting withdrawals and lapses, contained 290 names, being a considerable increase in the strength of the membership as compared with the close of the going year, March 1894. The Meeting thereafter proceeded to the re-arrangement of the list of office bearers. Mr. J. Clark was elected Chairman, and members of Committee were chosen as follows: Messrs. A. McDonald, John Fyfe, W. Young, G. Beilby, D. H.

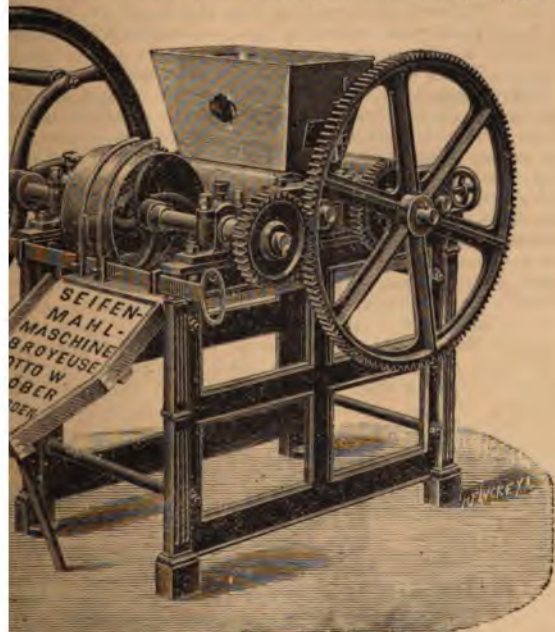
Anderson, W. I. Macadam, P. Rottenburg, J. S. Macarthur, T. L. Patterson, R. Pullar, H. Rose, E. C. C. Stanford, J. Stuart. Mr. J. B. Readman was elected vice-president, J. Stanley Muir was continued as the Hon. Secretary and these business proceedings took up the whole of the time setting, and there was no paper read.

SOAP-MIXING MACHINE.

accompanying cuts we show two views of a machine for grinding and mixing soaps. The rollers are of hard granite, mounted, and accurately adjusted. These machines will be very useful for incorporating soaps, and for mixing colours and



as, owing to the care with which the machine is made, a distribution of colour is ensured, the finished soap being of



flour all through. They can be driven by hand or power with fast and loose pulleys and a heavy flywheel, which the mixing rolls at a constant rate of rotation. Particulars are to be obtained from Herr O. Röber, Dresden.

G SCARCITY OF OLIVE OIL.—The production of olive oil for the present year has fallen below that of last year by about 200,000 hectolitres. In Spain olive oil is also very scarce. There will be insufficient for home consumption.

THE SEPARATION OF ARGON.

LECTURING at the Royal Institution on argon last week, Lord Rayleigh described the two methods used for the separation of argon by himself and Professor Ramsay. He himself had used a modification of the apparatus employed by Cavendish in the famous experiment when he passed electric sparks through a mixture of air and oxygen contained in a glass tube, and showed that there was a small residue of gas which refused to combine with oxygen. But now much better results could be obtained by the aid of alternating currents than were possible to Cavendish with the machines at his disposal, and in the arrangement devised by Lord Rayleigh seven litres of the mixed gases could be absorbed in an hour. The other method has been successfully employed by Professor Ramsay. It consisted in passing nitrogen got from the air over red-hot magnesium turnings contained in a hard glass tube, when the nitrogen was largely absorbed. The purest argon that had been obtained contained some $1\frac{1}{2}$ per cent. of nitrogen. Lord Rayleigh professed himself at a loss to say which was the better method. The gas obtained by either had proved itself to be exceedingly inert. Since the joint paper by Professor Ramsay and himself had been read at the Royal Society, argon had been submitted to the action of titanium at a red-heat, but it resisted the temptation to combine. M. Berthelot, however, had stated that it would form a compound with benzene under the influence of the silent electric discharge. The experiment had quite recently been tried by his son and Professor Meldola of sparking argon and acetylene together; they discovered, curiously enough, that the volume of gas increased, though that did not happen when acetylene alone was sparked. The light obtained by passing a discharge through rarefied argon is red or blue, according to the character of the current employed. Spectroscopy gives some information on the question whether the argon obtained by the oxygen method was the same as that obtained by using magnesium. A radiometer, filled with argon, revolves rapidly when placed in the electric beam, showing that argon is not anomalous in this respect at least. As to its density, Lord Rayleigh said Professor Ramsay had made numerous careful determinations with gas separated by the magnesium method, and found that it was 19.9 as compared with hydrogen, but no such careful experiments had been made with argon obtained by the other method. From considerations based on the ratio of specific heats the monatomicity of argon had been deduced. This result was doubtless very awkward, but its discoverers could not be held responsible for its anomalies; they could only apologise for the gas and themselves. He then proceeded to consider some questions that might naturally occur concerning it. First, was it a new gas at all? This question he would have passed over but for a suggestion he had just seen that it was merely nitrous oxide. Was it in the atmosphere? If not, then the original discrepancy in the densities of the two sorts of nitrogen must have been a false clue. But while 1 per cent. of argon was found in nitrogen got from air, there was very little in that got from chemical sources, and that little might well have come from the water used in the manipulation of gases, seeing that argon was more than twice as soluble in water as nitrogen. The third question was the nature of argon. Not so much as one might desire was known about its physical and chemical properties, but neither he nor professor Ramsay had ever suggested that it was an element until their paper was read before the Royal Society. He would not insist that the conclusions deduced from the specific heats were absolutely certain, but he pointed out that to prove the gas to be an element was very much like attempting to prove a negative. It was an interesting question whether it was condensed nitrogen represented by the formula N_8 , common nitrogen being N_2 . Its density ought then to be 21, but in fact it did not appear to be so much as 20. Nor were chemists agreed as to what this condensed nitrogen would be if we got it; some high authorities (such as Mendeléeff) thought it would be a stable substance, others that it would be unstable and explosive. In conclusion Lord Rayleigh mentioned that he had received a letter from the widow of Helmholtz, saying that her husband in the last months of his life, though lying half paralysed, still took a keen interest in scientific matters, and on hearing of the discovery of argon remarked, "I always thought there was something more in the atmosphere."

THE MIDLAND OIL COMPANY IN LIQUIDATION. At the Liverpool County Court on Monday, before His Honour Judge Shand, application was made by Mr J. H. Cooper, of Manchester, on behalf of the petitioning creditor, for the appointment of the Official Receiver (Mr F. Gittins) as provisional liquidator in the matter of the Midland Oil Company, Limited, of Pumpfields, Vauxhall-road, Liverpool. The petition for liquidation is appointed to be heard on the 26th inst., and the petitioning creditors are the Anglo-American Oil Company.—His Honour granted the order, with leave to get in the book debts, and to go on selling.

TECHNICAL CHEMISTRY.*

By F. W. STREATFIELD, F.I.C.

I MUST claim your indulgence this evening for the very sketchy paper that I have prepared on "Technical Chemistry," my time having been very much occupied.

I have no desire to obtrude any officious personality or to dogmatise, but I thought a suggestion or two might possibly be acceptable or offer matter for discussion. I, moreover, do not claim credit for much originality or novelty in the treatment of my subject.

When we bear in mind the armies of young chemists that are yearly turned out of our laboratories, and who are clamouring for employment, I think every effort should be made to convince our chemical manufacturers, and those connected with industries where chemical operations are involved, that we can do something more than merely analyse substances, that we can, in fact, improve or cheapen old processes of manufacture, and open up new fields of industry which I feel sure will be to the mutual advantage of all parties concerned.

A chemist, worthy of the name, at a works, must not only be an accurate analyst—a post, by-the-bye, that some people imagine can be efficiently filled by a School Board lad of 15 or 16—but should have been scientifically trained to *think and investigate*.

Possibly there are few scientific subjects more generally misunderstood than pure chemistry. We, as chemists, can, I hope, understand that a person may study such a subject as, say, electricity, without the study being necessarily connected with any immediate practical application, but let it be known that you are a chemist, then, of course, you either keep a shop or you "analyse things." Comparatively few can understand chemistry as a science quite independent of commercial application. And yet the abstract study of pure chemistry has done more directly or indirectly for commerce than I am afraid will ever be appreciated in this country by the present generation.

It cannot be too widely known that to successfully study pure chemistry the mind must be trained to reason logically, the hands to expert manipulation, and the eyes to careful and accurate observation. It is unnecessary for me to point out how essential these qualifications are in a person destined for commercial work. I, therefore, urge all who possibly can, to devote as much time as possible to pure research work. Unfortunately we are not all able to devote much time to chemical research, and hence we have to make the best possible use of our opportunities with the limited period that we can spend at the chemical school or college.

People take up the study of chemistry with widely different objects in view, some because it is part of a prescribed curriculum for a degree, and to be rigidly limited to the syllabus! others, happily imbued with an innate love of the subject and a spirit of investigation.

I propose, however, here to confine myself to the consideration of some of the chief points to be borne in mind when chemistry is studied with a view to its practical or industrial application.

The first essential in this, as in all subjects, must be a taste or predilection for the study. This is particularly necessary in chemistry, where a little mishap will occasionally make it necessary to repeat a lot of more or less tedious work.

Premising then that such collateral subjects as physics and mechanics are receiving their proper amount of attention, and that the student has at least a reading acquaintance with French and German, I would urge the early acquisition of *business habits*. By this I mean punctuality, accuracy, and neatness in work, with as much quickness as possible in manipulation. Much loss of time often occurs at the beginning of a student's career, in the balance-room. After a student has thoroughly mastered the working of a balance, he should endeavour to weigh off substances, &c., with as much expedition as possible. The importance of this is evident in commercial analyses, where, as in assay work, as many as 40 to 50 weighings per hour are often necessary.

The young chemist is frequently surprised and dismayed on entering business at the amount of work he is expected to get through in the course of a day, but he should recollect that at college he has been studying principles and practising methods; here he is expected to be familiar with, and ready in the application of what he has learned, and he should also have such a scientific knowledge of his subject as to readily comprehend and carry out any, to him, new or modified process of analysis, &c. Moreover, and I regret to have to say it, he must not take to heart any sneering remark such as "this is the way we do it." He should try while in Rome to do as the Romans do. In this connection I may mention that I know a firm where the usual glass rod used in filtering is tabooed, a filter paper coming well up the funnel, and a lipped beaker, being the time-saving expedient.

In a large number of our laboratories the old-fashioned system of instruction, I will not call it teaching, whereby a student is made

simply a recipient of facts (so-called) is being happily replaced by a better course of making him as far as possible, think for himself, distinguish, compare, and draw conclusions so that he may really be an intelligent and active worker.

A very valuable feature of our present system of chemical education is the importance that is given to the preparatory work, inorganic and organic. While every attention is given to the theoretical or scientific rules and laws involved in the preparation, the technical or practical aspect of the case is fully borne in mind, and such matters as yield and purity of product, nature of, and, if possible, working up of by-product, are noted. This last item is very often neglected in this kind of work.

The mother liquor left after the operation of recrystallisation is frequently thrown away, on the plea that it is too small or too impure to make it worth while to devote any more attention to it. I deny that this is very often the case, but there are many instances where by the addition of some cheap chemical the residues obtained in some useful form. While on this point, I would caution as to the folly of any penny-saved and pound-wasted.

I think we should endeavour to work on as large a scale as possible because we necessarily have then to deal with apparatus appropriate to manufacturing scale. I would recommend as much as possible the employment of pickle jars, or chemical store jars, instead of both on the score of safety and utility. If we have one or two steam pans at our disposal we can do wonders in the way of manufacture. No chemical technical laboratory is complete without steam. If steam is not laid on in the laboratory, small boilers purchased cheaply, and are useful in a hundred ways. Gas connections are also cheap, and, with a little ingenuity on the part of our young chemical engineers, much useful work may be done.

It is instructive in preparation work to calculate roughly the substances prepared and compare with manufacturers' prices. Let the young chemist put his time at 1s. per hour, and calculate percentage of profit.

I have seen it stated that in the Badische Anilin und Soda-Fabrik employment is given to 81 research chemists at a cost of £10,000 annually, and the question naturally arises why so little attention is given to this kind of thing in England. Well, I am altogether surprised at this. Many English chemical manufacturers possessing very little scientific knowledge themselves, have often a poor opinion of scientific chemists. The quack, the pedagogue, the unqualified man have been abroad and sown seeds of doubt. The manufacturers have been unfortunate in many instances in their appointments, selecting the superficial text-book reader instead of the laboratory trained man.

But a better state of things I am confident is coming. Manufacturers generally are sending their sons to our technical schools, and we must do our best to give them a sound scientific training. *As far as possible show them how to apply their knowledge.* Not for one moment mean to infer that we should attempt to teach particular trade or industry, but there are broad general lines of instruction may be given to advanced students, which will help them in any special industry. I will proceed to illustrate this meaning, and I think you will admit that we may, as before, start general lines initiate the student in the chemical principles involved in many of our industries. More particularly as they may have the guidance the very excellent technological programmes published by the City and Guilds Institute.

In that division of chemistry termed organic, it is almost impossible to estimate the amount of real technological work that can be carried out by a student of two or three years experience in chemistry. A student intending to take a position in a brewery or spirit distillery should specialize in such subjects as the analysis and purification of malt, Burtonising, and so on; the preparation and properties of starch, dextrine, and dextrose, including their estimation. It may be prepared from malt, and its behaviour on starch iodine solution, fortnight or so devoted to the polarimeter and the microscope, interests students.

A small brew having for its object the preparation of a sample of beer may very well be undertaken when the important subjects of mashing and fermentation receive attention. Most of the little details that are so necessary and essential to insure success are found very fully dealt with in the books devoted to the subject, especially the very excellent "Journal of the Institute of Brewing" and the "North of England Institute of Technical Brewing."

The actual operations may very well be carried out with the culinary apparatus to be found in any kitchen; e.g., a copper supplies the hot water, and acts as hop-luck. A large flower pot with a removable plug acts as mash tun, while the pickle jars mentioned serve as fermenting tuns. These, of course, are only makeshift apparatus, and not to be compared with a small model genuine brewing outfit.

(To be Continued.)

*A paper read before the People's Palace Chemical Society, February, 1895.

RECONSTITUTION OF THE WEAVER TRUST.

competing bills promoted by the existing trustees of the River Weaver Navigation and the Salt Union for the rearrangement of the constitution and management of the Trust were under consideration last week by the Select Committee of the House of Commons, presided over by Mr. Stuart.

Mr. Marshall, Q.C., in stating the case of Messrs. Brunner, Mond, & Co. against the bill of the existing Trustees, said the two main issues were as to the surplus paid by the Navigation to the Trust and as to the representation of traders on the Board of Trustees. While an amount of £1,000,000. had been paid over to the Trust from first to last, and £170,000. of that had been paid within the last five years, the borrowing of the £280,000. (to which reference had been made) had burdened the Navigation to such an extent as to double the tolls upon it. Therefore the traders had now to pay a larger toll than they would otherwise have paid. As to the reconstitution of the Board of Trustees, the proposal of No. 1 bill was that the number should consist of 38, 10 of whom should be old Trustees and 15 members of the County Council, while the Works Committee was to consist of seven members, six of whom would be members of the County Council. It was also proposed in the bill to alter the system of co-optative election, and that was not a principle, it was thought, the committee should support. Of these 38 members more than 25 were persons who were in no way connected necessarily with the trade on the river. All the traders wished for was to have a representation.

Mr. Basil Hewitt, one of the directors of Brunner, Mond, & Co., stated that that firm was the second largest toll-payers on the river, and had paid £6,000. a year in tolls. It was important that the trading interest should be adequately represented on the new Board, in view of the forecast they had of competition in the future, not only between English traders but also with traders from other countries where facilities were given by the State for free canals. Those who had the money should have the spending of it.—Cross-examined by Mr. Pemberton, the witness said he would like to see the Weaver Trust on a toll free. He believed it would be for the benefit of the country. Both he and Mr. Brunner had publicly stated that foreign traders were moving in the direction of free canals, and that this would have to move in the same direction if we desired to keep the trade.

Mr. Bowman (of Bowman and Thompson, alkali manufacturers, Gralam) said they were the third largest payers of tolls on the river.

Owing to the weight of the tolls now charged on the Weaver Trust for them to take some of their traffic along the Manchester Canal to Manchester to put it on the railway to deliver their goods than to get it over the Weaver. Unless the interests of the traders using the Navigation were treated with a very delicate and equitable portion of the traffic was likely to be diverted. The remedy was the adequate representation of the traders on the Board of Trustees.

He did not consider that nine out of a total of 38 would be an adequate representation.

Mr. Ward, managing director of the Salt Union, was then called in for the provisions of the bill promoted by that body. He stated that having regard to the interest of Liverpool in the salt trade he was fairly entitled to representation on that Trust. If it were not for the Weaver navigation would not be worth anything. The real question between the two bills was how far the trading interest should be represented.—By Mr. Worsley Taylor : The object of the bill was that any further surplus should be paid to the county, but that it should be devoted to reducing the tolls on the river. The Salt Union paid about £30,000. in tolls, or about 10 per cent. of the tolls on the canal.

It was the result would be to put £11,000. or £12,000. into the hands of the Salt Union?—I cannot say it would amount to that.

Mr. Messrs. Brunner, Mond & Co. would get something like £10,000.—Quite possibly.

What is that which is in Trust for the whole of the country would be divided into two individual traders?—There are 10,000 shareholders in the Salt Union, and a great number of them live in the county of

Chairman : By the Salt Union's bill there would be on the Board 38 trustees representing the county and 17 representing the county.

He admitted the interest of the county in the Navigation Trust was a permanent one, owing to its effect on the ratable value. He thought if there was an obligation on the new Trustees to form a new Trust and a great deal of the objection to the handing of the surplus to the county would be removed. But still there might arise the question for a reduction of the rates and tolls. Even if the traders had a majority on the Board, they should have a preponderating voice on the Executive Committee.

Mr. Garner, salt proprietor, Winsford, also gave evidence in support of the bill.

The Committee had not concluded the consideration of the bill when they adjourned till Monday.

On Monday the Committee decided, after a long discussion, that the new board of trustees should consist of 38 members, to be composed of ten representing the old trustees, twelve the Cheshire County Council, fourteen the tollpayers, and one each for Winsford and Northwich. They were of opinion that as the old trustees died their places should be filled by members chosen by the County Council on the same basis of representation as at present. With regard to the fourteen representatives of the tollpayers, the Committee suggested that not more than six should be given to any single interest such as the Salt Union, and that the other representatives should be in proportion to the amount of tolls paid. The Committee made a further condition that five of the old trustees should be residents of the district, and qualified to the value of £100. a year in land. The Committee adjourned to the 29th inst. for the consideration of clauses, and to obtain the sanction of the House to merge the two Bills before it, which sanction has, on the motion of Mr. Stuart, been accorded.

Legal Intelligence.

HOUSE OF LORDS.

(Before the Lord Chancellor and Lords Watson, Ashbourne, MacNaghten and Shand)

SALT UNION LTD. v. DEAKIN ET AL. CONTRA

ON Monday, their lordships delivered judgment on the cross appeals of the Salt Union and Mr. J. B. Deakin against the judgment of the Court of Appeal which varied the judgment of the Queen's Bench Division, remitting the case to the official referee for reconsideration with reference to the principles laid down in his judgment (*C. T. J.* 361, p. 97). The action was brought by Mr. Deakin for damages for alleged breaches by the defendant company of a contract with regard to commission. Mr. Deakin alleged that he had not received a commission equal to the highest being paid to any other distributor on the sale of salt; and further, that the prices charged him had been higher than the lowest charged to others. The official referee held that there had been no breach of agreement, and ordered judgment to be entered for the company with costs.—The Lord Chancellor moved that the appeal be affirmed, each party to pay their own costs.—Lord Watson said he concurred on the first point with great difficulty, but on the second without any hesitation.—Lords Ashbourne and MacNaghten also concurring, the judgment was affirmed and the appeal dismissed.

HIGH COURT OF JUSTICE.

QUEEN'S BENCH DIVISION.

(Before Mr. Justice Cave and Mr. Justice Lawrence.)

THE QUEEN v. LONDON COUNTY COUNCIL—EX PARTE COMMERCIAL GAS COMPANY.

MR. MACMORRAN showed cause on behalf of the London County Council against a rule for a *certiorari* to bring up into this Court a report of October 6, 1894, by the chief gas examiner in the metropolis affirming two reports made by gas examiners, who had examined at the Well-close-square testing place and at the Parnell-road testing place, and had reported that there was a deficiency in the illuminating power of the gas supplied by the Commercial Gas Company. The objection now taken to the chief examiner's report was that he had received evidence in the absence of the gas company. The testing of gas under the Acts must be done in the manner and with the candles prescribed—that is to say, sperm candles burning at a certain rate per hour. In this case the chief gas examiner obtained written and telegraphic statements as to the candles used in the test from one party without informing the other thereof.

Mr. SUTTON (the Attorney-General with him) appeared on behalf of Dr. Williamson, the chief gas examiner. He stated that Dr. Williamson placed himself in the hands of the Court. He could not attempt to justify the practice, but it had always been the habit of Dr. Williamson to obtain information as he wanted it from either party, without communicating with the other. Both sides, however, were still aware of this.

Mr. JUSTICE CAVE said the rule must be made absolute. The report was virtually a judgment. It was provided by statute that such report was final, and was a basis for future proceeding. Being a judicial proceeding the rule that no evidence should be received on behalf of one party in the absence of the other applied. In a consensual arbitration if both parties agreed that this course should be followed it would perhaps follow that they could not afterwards object to it; but this was not a consensual arbitration. It was one created by statute and was compulsory. It was fatal to the authority of such a tribunal not to observe this rule. At the same time, no moral blame whatever attached to Dr. Williamson. He had merely followed his established practice.

Mr. JUSTICE LAWRENCE agreed.

Correspondence.

* We do not hold ourselves responsible for the opinions expressed by our correspondents.

FACTS FOR MANUFACTURERS.

(To the Editor of the Chemical Trade Journal.)

SIR,—It is impossible to walk along the principal streets of our large cities without being struck with the amount of foreign merchandise passing to and fro on lorries or exhibited in the shop windows; and it seems to me that few realise what this means to the community at large, and that it is one of the causes of such low prices as well as that of our gradually diminishing trade. This country on account of its rightly upholding "Free Trade" principles is the receptacle for foreign surplus stocks. Countries such as America and Germany encourage home manufacturers by imposing duties on foreign made goods, and the prices obtained at home enables them if necessary to sell their surplus stock at lower than cost price, and so they obtain a good footing and connection in this country, and owing to the larger turnover produce more cheaply.

All praise is due to those countries for their enterprise, and if their manufacturers can sell a better article at the same price, or the same article at a cheaper price, it seems only reasonable that we should buy it. But manufacturers at home should take greater pains to find out if they cannot get a British manufactured article which will be of equal value to the foreign article. This is the policy adopted by our foreign competitors, and shows much wisdom, because we cannot give our money away and retain it. For instance, suppose our capital upon which we have to trade is represented by £1,000,000, and that of say Germany by £100,000, then if by buying her goods we increase her capital to £500,000, we thereby enable her to compete on more favourable terms and push our manufacturers still further out of the market.

It is distressing to think that we are being pushed out, but to feel also that we are supplying the means and in other ways helping forward so undesirable a state of matters is still worse. Let me give an example. You have ventilated and advocated very consistently in your columns the raising of the flash point of burning oil, and shown that this desirable end has been frustrated by the efforts of the Standard Oil Company of America, for selfish purposes. American petroleum has, from its introduction, been known to be unsafe to use as a burning oil, and efforts have been made to raise the standard flash point to that of the Scotch oil, but the influence on the petroleum side has been so strong that, notwithstanding the daily recurring lamp explosions, it has been found impossible to persuade our authorities to effect a change, with the result that whereas we had about 30 oil works in Scotland producing a safe oil for the public use, they have by an unwarranted competition been reduced to 5, and so the money which once flowed into our own lockers now goes to the United States to help to tighten the noose round our industrial neck a little tighter. We shall realize some day, when a war breaks out or when opposition is completely removed or oil gets dearer, that our home manufacturers should have got fairplay. I do not mean Protection. It seems to me that it is possible to pay a slightly higher price for a home made article and yet to buy more cheaply, because we are retaining our capital, which is thereby utilized in employing and educating our own working men, who are then better able to keep themselves and pay part of the national burdens.

Another important point is the absurdity of engaging foreign chemists when as good can be procured at home. No doubt in some branches of chemical research our chemists are behind, and it is necessary to employ foreigners, but it should end there. How can our Universities, Colleges, and Technical Schools flourish unless there is a demand for young chemists, or how can young men be expected to come forward to be educated? We have imparted our methods of working and business connections very often to foreign competitors through foreign chemists who come here for a time to pick up useful knowledge and return home again to give their friends the benefit of their experience. Foreigners are much wiser in this respect, and they do not show every interested foreigner round their works who has a letter of introduction from some influential person. I heard lately of a case in point. A Japanese gentleman through a friend at Court managed to get two of his sons, who had been educated in Europe, into the laboratory of one of the large German colour works, where they gave much satisfaction. They remained on in the hope of being removed into the works, but without effect. Eventually the reason was demanded, and they were told that it would be a very unwise policy, because after being in the works for a time they would go back to their own country and start opposition. If we in this country had more discretion in this respect it would be well.

A patriotic effort has been made with much success to revive our silk trade. May similar efforts be made in other directions.—Yours, &c.,
CHEMICUS.

ARGON-OXYGEN CYLINDER EXPLOSION

(To the Editor of the Chemical Trade Journal.)

SIR,—There are some people in this country who still believe in the existence of argon. The *Electrical Review*, it belongs to this category of "doubtful Thomases." As you August last the two eminent English scientists, Rayleigh and discovered and isolated argon. Since that time they tried to sort of chemicals combine with argon, but so far without success. The French savant, M. Berthelot, however, charged it with oxygen, induced, after all, argon to combine with hydrogen and certain carbons. The said *Review* is very much surprised to learn that the English scientists tried their best for nine months to induce it to combine with other elements or substances without any success. The said Frenchman accomplished this feat in a couple of hours. To me that instead of eulogizing this Frenchman who competes to unite with benzene, &c., we should bear in mind the very fact that this combination took place during a silent discharge in order to get ozone you must charge a stream of air or oxygen with a "silent discharge" of about 10,000 volts at a very small current. Thus produced, oxygen (ozone) has, however, quite different properties, though ozone is merely an allotropic form of oxygen. If you charge argon with a silent discharge you get an all argon, which must have quite different properties and reactions, pure and simple.

In connection with the recent deplorable explosion at F Street Station, I would suggest the following: There are two methods for the production of oxygen gas, viz., from barium peroxide and Brins' method, and the old-fashioned method from chlorate of potassium.

Now, the latter method always gives off a little chlorine gas which is compressed into the usual steel cylinders under a high pressure. It appears to me that under certain circumstances and conditions a highly explosive substance Cl_2O or ClO_2 will be formed in the cylinder, and which substances result in the explosion of the cylinder. I admit that my theory is somewhat vague, but is, not improbable.—Yours, &c.,

Manchester, April 6th, 1895.

R. W.

[According to Dr. Dupré the quality of the oxygen gas was such that there was no necessity for taking it into consideration when explaining the explosion.—ED. C.T.J.]

ANSWERS TO CORRESPONDENTS.

C. F. K. (Cologne).—We have made many inquiries, and have learned that our knowledge that the address is Chemical Syndicate, care of Greville and White, 60, Haymarket, London, W.

S. M. AND SONS.—We are giving the matter our consideration. The matter is extensive already.

P. B. M.—Presumably you mean wrought steel cylinders. These are charged here, but chiefly on the Continent. We do not know where to see the process working. We should recommend Thorp's Dictionary of Chemistry and Lunge's Sulphuric Acid Manufacture.

R. D. C.—We will make the time you name convenient.

W. M.—The result has been emphatically a negative one, and we do not see how we can act upon your suggestion under the circumstances. It is the same in every case we have tested the point, and the result has been the same in each case.

A. E. B.—There are three preliminary examinations for Association, examinations being held each year, about January and July. The further probation are necessary to qualify for the Fellowship. Candidates are accepted in lieu of the preliminary examinations. Full particulars had from the Secretary, 30, Bloomsbury-square, London, E.C., on application.

REGULATIONS FOR WOOL-SORTING.

RECENTLY we referred to the regulations which had been set up by the Health Department of the Bradford Corporation following are the actual recommendations:—

1. All bales of wool or hair shall be opened by a person skilled in judging the condition of the material, any woolsorter to be such person if willing to perform the duty. If he finds the material unobjectionable they shall be sorted in the ordinary way. If, on the other hand, any bale, dead or fallen fleeces or damaged materials are such bale shall be at once taken from the room where opened and dealt with as noxious. All van, Persian, damaged wool, fleeces, and foreign skin wool or hair, shall be deemed noxious and shall not be opened in the sorting-room. Noxious wool or hair before sorting be thoroughly saturated with water, and then washed in suds, rolled and sorted while damp, or if steeping would be injurious to the article, or would render difficult the working of the material it shall be disinfected.

2. No noxious material, Alpaca, Pelican, or East Indian Cashmere shall be opened in the sorting-room, but in a place specially set apart for the purpose, separate and distinct from the sorting-room, and be opened over a fan by a person capable of judging the condition of the material.

The sorting-rooms for all classes of Mohair, Camel Hair, Persian Merino, and Alpaca shall be provided with extracting fans so arranged that each sorting-board shall be independently connected with extracting-shaft, in order that the dust arising from the material sorted may be drawn downwards and thus prevented from settling on the sorter.

The dust collected by the fan must not be discharged into the air, but be received into properly constructed catchboxes. It must be removed by the fan at least twice a week. Sweepings from floors, walls, and from under the hurdles shall be removed weekly from the sorting-room, and all pieces of dead skin, scab, and clippings, or "clippings" must be removed weekly from the sorting-room, and not be dealt with or sold until they have been disinfected.

All bags in which wool or hair has been imported shall be picked out and not brushed, and such bags shall not be sold or used for any purpose until they have been disinfected.

No sorter having any exposed open cut or sore upon his person shall be allowed to sort.

A place shall be provided in which the sorters can leave their outside the sorting-room, or in some suitable place covered over, during working hours.

Proper provision shall be made for the keeping of the sorters' food in the sorting-room, or in a closed closet therein, during working hours.

No meals shall be taken in the sorting-room. The sorting-rooms shall be well ventilated, by fans or otherwise; this cannot be effectually accomplished by open windows only, shall be employed to secure downward ventilation, so arranged to protect the workmen from draught. The windows shall be kept closed during meal hours. The sorting-rooms shall be warmed during winter.

No wool or hair shall be stored in the sorting-room, unless the same is effectually screened off from such room.

The floor of the sorting-room shall be thoroughly sprinkled with water, so as to allay dust, and swept daily after work is over. The sorting-room shall be thoroughly disinfected and the walls thereof washed at least once a year.

Requisites for disinfecting and treating scratches and slight abrasions should be at hand in the sorting-room, as thereby fatal consequences may be avoided.

Proper provision shall be made for the sorters to wash in or near the sorting-room.

A copy of these precautionary regulations shall be hung up in a conspicuous place in every sorting-room.

Trade Notes.

CASELL GOLD EXTRACTING CASE.—Judgment was delivered yesterday in the Court of Appeal by Lord Justice Smith in connection with the appeal of the Casell Gold Extracting Company against the decision of Mr. Justice Romer in the action brought by the said company against the Cyanide Gold Recovery Syndicate. The appeal was dismissed with costs. The judgment will be given in the next issue.

CANDLEMAKERS' COMBINATION.—The Candlemakers' combination of the United Kingdom is now practically complete, only two holdings aloof. Prices for wax will therefore be raised one penny per pound to those inside the combination, and one penny per pound to those outside the association.

DEATH WITH BOILING PITCH.—Last Wednesday week, shortly after noon, a man named Edward Flats, employed by the Sheffield Iron Works, was attending to a pitch boiler in Norfolk-street, when the boiler exploded, and flew over his head and face. He was taken to hospital. After receiving attention, he was allowed to go to his home.

MANURE DEALER.—We are informed that Mr. R. D. Steele, who is well known in the manure trade, and who has hitherto carried on business as R. D. Steele and Company, has gone into partnership with Bradbury and Hirsch, of Queen's Buildings, 11, Dale-street, London. The manure material department will be under Mr. Steele's own immediate management.

LOSS OF RESIN FOR IRLAM.—The barque *Arcturus*, of Farsund, at Eastham on Tuesday last week, with a cargo of resin for the Irlam, destined for the Co-operative Wholesale Society's new wharf at Irlam. The Society has a private wharf on the canal at this place where the vessel can lie alongside clear of traffic whilst discharging. Her cargo was originally loaded by the barque *Larfold* at Eastham, but was afterwards transferred to the *Arcturus*, the first vessel having been condemned as unseaworthy. Messrs. Japp, of Brazenose-street, Manchester, and Liverpool, are the agents. This is the first vessel to discharge at Irlam. She arrived on Friday, 5th inst.

PRODUCTION OF BLEACH IN THE U.S.A.—Considerable attention has lately been attracted to the Erie Chemical Company, Erie, Pa., which is the first and only works producing bleach in the States. They are said to be producing an excellent article, 36% available, very white and very soluble. Needless to say they find no difficulty in disposing of their production.

NITRATE STATISTICS.—The permanent Nitrate Committee's public statistical circular for April shows:—Total exports to Europe, March, 1,121,000 quintals; loading for Europe 1st April, 1,400,000 quintals. Imports: Europe, March, 189,610 tons; deliveries in Europe, March, 193,630 tons; visible supply Europe 1st April, stocks and afloat, 420,190 tons.

RECOVERY OF GOLD BY CYANIDE PROCESS.—Mr. J. Brinton, presiding at the meeting of the Durban Roodepoort Gold Mining Company, Limited, last week, stated that the treatment of the tailings by the M'Arthur-Forrest process had been well maintained during the year. In 1894 they milled 77,745 tons of ore, which produced 38,444 ounces of gold, of the value of £145,096. In the same period they treated 101,255 tons of tailings, which yielded 22,561 ounces, of the value of £66,586. The cost, including royalty, of the treatment of the tailings was 5s. 1d. per ton, compared with 6s. 4d. per ton in 1893.

CARBORUNDUM FOR ELECTRIC LAMP FILAMENTS.—Mr. E. G. Acheson, the inventor of carborundum, has recently produced a carbon for which he claims high fusing point combined with high luminosity. He takes pure carbon and carborundum, reduces both to fine powder and mixes them in the proportions of nine parts of the former to one of the latter, together with tar or any other good binding material. The mixture is then moulded into proper form for use and baked. In order to get the full and complete effect of the illuminating qualities of the carbide of silicon more distinctly separated from that of the carbon, the ordinary cored carbon rod or point is used and the core is filled with the carbide of silicon, either alone or with a binding agent. For the filaments of incandescent lamps, the carbide of silicon in a very fine powder is mixed with and suspended in the oil used in the oil bath, for the treatment and building up of the carbons; and in the process of depositing the carbon from the oil bath on to the filament the fine particles of carbide of silicon become fixed to the filament simultaneously with the deposit of carbon.

SERIOUS PETROLEUM LAMP FATALITY.—Five children lost their lives on the night of Friday, 5th inst., by a fire which occurred at Hermit-road, Canning Town, London. About half-past ten the West Ham fire brigade received an alarm, and proceeded to a shop occupied by Mr. Fox, a herbalist. The fire was soon extinguished, and it was then found that five children of the occupier, who slept in a back room upstairs, had been suffocated. The fire was caused by the explosion of a lamp, and the father is stated to have made an unsuccessful attempt to rescue the five children. He entered the room, but it is supposed that the heat and smoke overcame him, as he rushed out again. The five victims were children of Mr. Fox's first wife, and were aged fourteen, ten, eight, six, and three. The first three and the last were girls, the other a boy. Mrs. Fox succeeded in saving the life of her own child, which slept with her. The bodies of the children were removed to the local mortuary. It is stated that the lamp which exploded was knocked down either by Mrs. Fox or her baby. The latter being restless Mrs. Fox went into the shop with the child to get a powder, and it was then that the lamentable accident, which has led to such a sad loss of life, occurred. All the bodies are more or less charred, but all are recognisable. What was the flash point of the oil? Where did it come from? and Was the lamp a "safety" lamp? are three points upon which particulars from the L.C.C. would be very acceptable.

GOLD PRODUCTION.—The Orion Gold Mining Company, Limited, have issued the following statement:—Details of working for February: Tons milled, 4,663; stamps working, 40; yield from plates, 872 ounces. Tailings treated by cyanide, 2,592 tons; yield of bullion from cyanide works, 1,566 ounces. The Van Ryn Gold Mines Estate report result of 26 days' working Van Ryn with 50 stamps, from 4,200 tons, 2,148 ounces; and from cyanide works, 5,500 tons, 960 ounces; total yield for the 26 days 3,108 ounces. The Mysore Gold Mining Company report for March as follows:—5,630 tons of quartz produced 4,426 ounces. 4,496 tons of tailings produced 750 ounces. 1,252 tons of tailings (cyanide process) produced 259 ounces. The New Clewer Estate and Gold Mining Company report the following results for March:—1,925 tons, yielding 675 ounces; from cyanide works 1,260 tons, yielding 788 ounces. The Wemmer Gold Mining Company, Limited, is in receipt of the cable advising result of work done during March:—5,304 tons crushed, yielding 4,267 ounces of gold, 40 stamps, working 31 days; and from cyanide plant 4,125 tons treated, yielding 1,448 ounces of gold, 200 tons of concentrates caught, assaying 50z. 5dwts. The Lisbon-Berlyn Company, Limited, reports the following results for March:—Milled, 1,900 tons; recovered, 212 ounces; tailings treated by cyanide, 2,200 tons; recovered, 735 ounces; total recovered, 947 ounces.

MESSRS. LEONHARDT AND COMPANY.—This firm, we are informed, has recently amalgamated with the Farbwerk Mülheim, near Frankfurt a/Maine, and the old business will now be carried on under this title. Herr A. Leonhardt and Dr. Hallgarten will act as managing directors.

THE RIO TINTO COMPANY, LIMITED.—This company announces that at the general meeting, to be held on the 19th inst., they will propose payment of a final dividend for the year 1894 of 4s. per share, free of income-tax, making with the interim dividend 8s. per share, or 4 per cent. for the whole year; writing off £147,000., placing £75,000. to a reserve fund, and carrying forward £25,000.

WOOD PULP via THE CANAL.—The imports of wood pulp into Manchester during the month of March were the largest on record, and show an increase compared with the previous month of more than twenty thousand bales and seventy-six tons. At only one port of the kingdom (London) were the Manchester arrivals exceeded. During the week ending April 3rd the following consignments were discharged at the Manchester docks:—From Gothenburg, four consignments of 6,057 bales, 4,028 bales, 2,186 bales, and 1,710 bales respectively; from Fredrickshald, 1,720 bales; and from Christiania 936 bales; total, 16,637 bales. This total exceeds the combined imports at all the other ports of the United Kingdom for the corresponding period, as the following figures show:—London, 9,346 bales; Hull, 1,692 bales; Grangemouth, 950 bales; Leith, 538 bales; Glasgow, 488 bales; Granton, 320 bales; and Liverpool, 170 bales; total, 13,504 bales.

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzols are steady, without change in price. Carbolic acids generally are firm. Crude in particular is steady at 1s. 6½d. for 60%, owing to stocks being light. Crystals are firm at 5¼d., with a tendency to increase in value. Crude naphtha and solvent are unaltered, while there is virtually no change of importance to chronicle in either creosote or anthracene. Generally speaking there is a slightly better tone throughout tar products. Pitch is steady at 34s., f.o.b. East Coast.

Sulphate of ammonia is easier. There has been a little more business doing, both for home and Continental consumption, but owing to parcels being more freely offered there has been no difficulty in meeting the demand. Quotations are very irregular, and in many cases unreliable, the nearest values being: London £10. 5s., Liverpool £10. 7s. 6d., Hull £10. 6s. 3d., and Leith £10. 6s. 3d., all prompt.

LIVERPOOL MINERAL MARKET.

With the advent of the holidays, the market for minerals has toned quieter, but without any material change in prices. Manganese: Arrivals are few, and for contract work stocks are being reduced. Ground manganese is steady at £6., £8., £10., and £12. 10s. per ton, according to quality. Manganiferous iron ore is without alteration at 15s. to 16s. per ton c.i.f. for Grecian in cargoes, and 16s. to 17s. 6d. per ton c.i.f. for Spanish. Bauxite, Irish Hill brand: Very extensive inquiries are now in operation for this quality in particular, chiefly arising from the manufacture of aluminium metal therefrom; prices are, therefore, firm, with the probability of an advance, at 20s. per ton for first quality, 16s. per ton for second quality, and 12s. per ton for third quality f.o.b. Chrome ore: This is in brisk demand, and prices are well maintained, at 70s. per ton for 40% and 110s. to 115s. per ton for 50% ore. French chalk: Arrivals are few, and consequently there are no material fluctuations in the price, which still stand at 70s., 80s., 90s., and 110s. per ton for "Angel White" and "Gold Medal" qualities. Tungsten metal is steady at 1s. 9d. and 2s. 3d. per lb. Plumbago is selling freely, the demand continuing very good for founders' and lubricating qualities at £5., £6., and £10. per ton. Arsenic still continues scarce. Barytes: Carbonate is easier at 60s. to 70s. per ton for fair to good quality; sulphate, lump, 40s. per ton, ground from 45s. to 70s. per ton. China clay: 22s. 6d., 30s., and 35s. per ton for prime qualities. Bog ore continues in steady demand at about 30s. 6d. per ton. Fluorspar: lump and ground in fair demand at 40s., 50s., and 120s. per ton, according to quality. Feldspar is steady at 30s. to 40s. per ton. Cryolite still remains unaltered at £40. Oxide of uranium is steady at 10s. 6d. to 11s. per lb.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil is firmly held, being offered in small quantities only. In consequence the demand is restricted; a small quantity of *Acacia* having been done at £20. 10s. per ton, ex quay. Olive is firm

for spot lots, and the demand satisfactory: Levant and Candia £30. 10s. to £31. and £31. to 32. respectively. Linseed keeps Liverpool makes in export casks being firm at 20s. 6d. to 21s. cwt. Cottonseed is slightly firmer, but quiet theretofore: L refined being quoted 17s. 9d. to 18s. 6d. per cwt. Castor oil changed, with good seconds Calcutta and first pressure French per lb. Resin is in fairly good demand at recent prices. S turpentine are steady at 23s. 3d. per cwt., with a moderate Tallow unaltered. Petroleum firm at 6½d. to 8d. for American 5½d. per gallon for Russian refined.

COLOURS are steady, without alteration in Ochres: Oxfordshire, common, £10., medium, £12., best, Derbyshire, common, 40s.; medium, 50s., best, 60s.; Weld 90s., seconds, 50s., and common, 18s.; Irish, Devocahire, 45s.; French, J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Turkish quiet; Devonshire, 50s. to 55s. White lead, £16. 1 unchanged. Venetian red, £6. to £10. Cobalt: Prepared 9s. 9d.; black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; 2s. 6d. Oxide of iron: Common, £7.; medium, £10.; fine Zinc oxide, £22. 10s. to £25.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron, steady: Scotch warran at 41s. 10½d., Middlesbrough 34s. 4½d. cash, and hematite 42 Copper, quieter: Chili bars, G. O. B.'s and G. M. B.'s, at £39. 16s. 3d. to £40. 1s. 3d. cash, and £40. 3s. 9d. to £40 three months. Tin, easier: Straits closed at £64. 5s. to £64 cash, and £64. 15s. to £65. 5s. three months; Australian English ingots, £68. Lead, steady: Spanish, £10. 1s. 3d.; £10. 2s. 6d. to £10. 5s. Silesian spelter: ordinary, £13. Nickel, 1s. 2½d. Antimony, £31. Quicksilver: first hands, 2 second hands, £6. 12s. 6d. *Copper shares*, quiet: Cape, 1½ Copiapo, 1½ to 1½; Libiola, 3½ to 3½; Mason and Barry, 2½; Rio Tinto, 13½ to 13½; Tharsis, 4½ to 4½.

GLASGOW, TUESDAY.—Market steady, with moderate Scotch done at 42s. 1d. and 42s. 0½d. cash, closing with 42s. cash, sellers ask 42s. 0½d. Cleveland closes with 34s. 6d. cash, sellers ask 34s. 7d. Cumberland hematite 42s. 8½d. cash; closing with buyers at 42s. 8d. cash, and 42s. 9d. Middlesbrough hematite closes with buyers at 41 cash, sellers ask 41s. 6d.

MISCELLANEOUS CHEMICAL MARKETS.

There has been a fair amount of business passing during week, notwithstanding the approaching holidays. Bleaching continues in good request, but price is still in buyers' favor softwoods on rails, and £7. 3s. 9d. hardwoods, f.o.b., at to-day's values. Caustic soda moves freely, but prices are in Current quotations are as follows:—F.o.b., Liverpool, 77 10s.; 74%, £8. 10s.; 70%, £7. 10s.; 60%, £6. 10s.; 10-ton upwards. Soda ash of all grades is quiet, and without change Soda crystals, 37s. 6d. in bags, and 42s. 6d. in casks at maker Saltcake is in better request, and higher prices are being Chlorate of potash and soda unchanged, at 4½d. and 4s. per lb. respectively. Nitrate of soda rather weaker, at 15s. Sulphate of copper steady, at £15. 10s. f.o.b. Prussiates are easier. Yellow is quoted to-day at 9d. per lb., and red 1s. 3 lower figures would probably be taken. Borax still offers low, but without much business resulting. White powdered firm, at £14 15s. Garston. Lead salts have a slightly strong Foreign white is firm, at £24 10s., c.i.f.; English at £26. at £19. per ton. Carbolic acids are firmly held, and there enquiry. Crude 60% is quoted at 1s. 6½d., and crystals 10d per lb. Sulphocyanides are in fair request. Barium, 5d. Ammonium, 7d. per lb.

REPORT ON MANURE MATERIAL.

With the exception of a continued activity in nitrate of soda, has been quiet throughout the week. Manure manufacturers are fully supplied with material, and they seem not much inclined to further purchases. Quotations for mineral phosphates are weak but they do not induce business. A cargo of River Plate bones, has changed hands, but the price is not reported. For summer higher prices than recently current would have to be paid crushed Kurrachee bones, for shipment, £4. 7s. 6d. per ton but buyers don't respond. Bombay bone meal is selling at £4. 12s. 6d. per ton, and nearly due at £4. 10s. For shipment per ton would be accepted, and probably £4. 3s. 9d. per ton.

rice in exchange is making sales ahead more risky. Nitrate of soda arrivals, is easier on spot: refined quality may now be 8s. 6d. per cwt., and ordinary quality at 8s. 4½. per cwt., arrived at port of call and due cargoes have changed hands at from 8s. 1½d. per cwt., according to size and test. Dried blood had at 8s. 6d. per unit, in single bags, free on rails at works, 2s. per unit in doubles, f.o.b. Liverpool, fine condition and test.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

Expected meeting of delegates from all the mineral oil companies did not come off last week, but it is believed that it will certainly be before the present week is out. The business is the position of oil for the coming consumptive season, and it appears that of a substantial rise (one penny per gallon would be so considered) is gaining ground. Everything will of course depend on the market for imported oils, which is at present firmer than the custom. Solid paraffins, lubricating oils, and naphtha unchanged.

State of ammonia shows no signs of the present downward course rested, unless in the attitude of some of the makers who elect.

During the past week it has been done down to £10. 7s. 6d., sellers only, according to the assertion of the makers. Buyers scanty, and the belief on their side seems to be that the article is lower still.

Very respecting the forward requirements in shipping chemicals quite so active, but the prospect as regards the approaching is regarded as a fair one, especially as affecting transmission for the Baltic ports. Prices are not appreciably affected either.

Prices current are:—Soda crystals, 35s. nett, Tyne; 48/52°, £3. 12s. 6d. to £4. 5s. nett, Tyne; white alkali, £4. 10s. to £5. 5s. nett, Tyne; alum in lump, £5. 10s. nett; caustic soda, white, 74° £9., 70/72° £7. 12s. 6d., 60/62° 6d., and cream 60/62° £6. 10s., all nett, Liverpool; bleaching £6. 5s. to £7., nett, Tyne; saltcake, 17s. 6d.; borax, English £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 60/62° £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; state of potash, 4½d. nett, for Scotch and English deliveries (for 4½d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); of potash, 4¾d. less 5%, Liverpool; nitrate of soda, 8s. sulphate of ammonia, £10. 7s. 6d. to £10. 10s. prompt f.o.b. ammoniac, first and second white, £39. and £37. nett, any port; of copper, £15. 5s. less 5%, Liverpool; paraffin scale, hard and soft, 1½d. to 2½d. per lb.; paraffin wax 120° semi-refined, 2½d.; paraffin spirit (naphtha), 4½d. to 5d. per gallon; oil (burning), 4¾d. at works, for Scotch buyers (English 4½d. lower); ditto (lubricating) 865° £4. 5s.; 885° £4. 10s. and 890/895° £5. to £5. 10s. Week's imports of sugar at 11s. were 6,694 bags and 6,209 baskets cane unrefined; also 5,504 lb. unrefined.

TYNE CHEMICAL REPORT.

TUESDAY.

Chemicals continue dull, and the demand is disappointing in view of the year. There is little or no change in prices. 76/77% steady at £9. 10s. Soda crystals £1. 16s. 6d. per ton gross locally. Sulphur scarce at £4. 5s.

Whiting powder, softs, £7. 5s. per ton, nett; hard, £7. 10s. per ton, nett; caustic soda, 76/77%, £9. 10s. per ton, nett; do., 70%, £7. 15s. per ton, nett; recovered sulphur, 2 cwt. bags, £4. 5s. per ton, nett; do., 48%, £3. 15s. per ton, nett; do., 52%, £4. 2s. 6d. per ton, nett; do., 56%, £4. 10s. per ton, nett; alkali, 36%, £2. 15s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. 10s. per ton, nett; do., 52%, £5. 5s. per ton, nett; hyposulphite of soda, 7 cwt. casks, £6. per ton, nett; do., 1 cwt. kegs, £6. 12s. 6d. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £1. 16s. 6d. per ton, nett; weight; do., 2 cwt. bags, £1. 16s. 6d. per ton, nett; state of potash, 5½d. per lb., less 6%; pearl hardening, 10s. per ton, nett; pure white sulphate of alumina, £4. 2s. 6d. per ton, nett; blanc fixe, £7. 10s. per ton, nett; chloride of barium, 10s. per ton, nett; carbonate of alumina, £28. 15s. per ton, nett; aluminate of soda, £33. 15s. per ton, nett; in 5 ton lots, £28. per ton, nett.

Tin in rather better demand at from 9s. to 9s. 6d. per ton, net.

LS.—Trade is somewhat dull, though collieries are working as usual before the holidays. To-day's quotations are:—Best

Northumbrian steam, firmer, 8s. 9d. to 9s. per ton; second qualities do., 7s. 9d. to 8s. per ton; small steam, 4s. to 4s. 3d. per ton; gas coals dull, 6s. 9d. to 7s. per ton; bunker coals, weaker, 6s. 6d. to 7s. per ton; household coals, easier, 10s. 10d. to 11s. per ton. Coke, quiet, 12s. 6d. to 13s. per ton.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—This market is about an average one, the principal feature being an advance of 15s. per ton upon refined cottonseed oil; also a 10s. per ton advance upon linseed oil, owing no doubt to large operations by London operators, who have been buying linseed heavily. The import of linseed during the week has been 5,800 qrs. from Libau; the prices current for linseed oil being 18s. 4½d. naked spot. At the close, however, market is dull again, with sellers at 18s. 3d. Month oil offers at 18s. 4½d., May-Aug. 18s. 6d., and Sept.-Dec. 18s. 3d.; boiled, £1. per ton extra; refined, £1. 10s. Export for the week, 2,240 cwt. Refined cotton oil, after the advance of 15s. per ton on spot, closes quiet 16s. 7½d. naked; May-Aug. offers at 17s.; crude, 14s. 9d. naked, sellers spot; May-Aug., 15s. 3d. sellers; casks 17s. 6d., and ordinary barrels 25s. per ton extra. Export for the week, 9,840 cwt. During the week the import of cottonseed from Alexandria has been 2,344 tons. Rape oil is quoted from 18s. per cwt. Olive oil has improved rather in prices by about 10s. per tun. Castor oil, 2½d. per lb. for first pressure. Spirits of turpentine, 23s. 6d. per cwt. Cod oil from £16. 10s. to £21. per ton. Sod oil from £16. to £21. per ton. Boiled paint oil, £12. per ton. Soft soap, 14s. 6d. per cwt. It may be mentioned here that, out of a total shipment of cottonseed from Alexandria of 218,280 tons since September last, 118,110 tons have been shipped to Hull; the present stock there being 60,000 tons.

CAKES.—Linseed cakes: A firm market. 95% pure, £5. 17s. 6d. to £6. 2s. 6d. per ton; Russians, £5. 12s. 6d. to £6. 2s. 6d.; ordinary, £5. 2s. 6d. Cotton cakes firm, and inclining dearer: best makes £3. 10s. to £3. 12s. 6d.; seconds, £3. 7s. 6d. Rape cakes: Black Sea, £2. 7s. 6d. to £2. 12s. 6d. per ton; feeding, £4. 2s. 6d.; East Indian, £3. 7s. 6d.

PAINTS continue in good demand. Prices are: Ready mixed paints, in lever tins from 1lb. to 7lb., from £24. per ton. Red lead unchanged; white lead, in oil, from £16. 15s. Venetian red, black, green, yellow ochre, and oxide paints from £11. per ton. Dry ultramarines from 2d. to 9d. per lb. Vermillionettes from 5d. per lb. Lime blue, £16. per ton. Imperial black varnish, £5. 10s. per ton.

New Companies.

British Mining and Mineral Co., Ltd.—CAPITAL £10,000., in shares of £2. each. This company has been formed to acquire and carry on the Pwll-Clai Clay and Silica Works at Holywell, Flintshire. The subscribers to the memorandum of association are:—J. W. Thorowgood, Lion Brewery, Waterloo, brewer; J. Sawyer, 103, Walmer-road, Waterloo, contractor; J. Woolcock, Claremont House, Seaforth, engineer; F. Crossley, 5, Brazenose-road, Kirkdale, mine owner; J. H. Foster, 167, Chatham-street, Liverpool, accountant; J. Wolfendale, 30, Formley-street, Liverpool, oil refiner; E. Mounsey, 8, Oakley-grove, Liverpool, merchant.

Cape Nitrates Company, Limited.—CAPITAL £10,000, in £1. shares. This company has been formed to acquire and develop certain nitrate grounds and other mineral property at the Cape. The subscribers to the memorandum of association are:—J. W. Folan, 27, St. Agnes Place, S.E., clerk; E. C. Clegg, 5, Cranleigh Villas, Forest Hill, S.E., clerk; J. W. P. Cooper, 79, Wolfington-road, Norwood, gentleman; A. E. Jowett, 12, Camp-road, St. Albans, gentleman; G. Simmons, 8, Lamont-road, Chelsea, gentleman; A. D. Brown, Upper Clapton, shorthand writer; J. W. Alcott, Manor Park, law stationer.

Newman and Owston's Colour and Chemical Company, Ltd.—CAPITAL £10,000, in shares of £5. each. This company has been formed to acquire the business of Messrs. Newman and Owston, and to carry on the business of colour and chemical manufacturers and merchants. The subscribers to the memorandum of association are:—W. A. Ouston, Ambleside, Forest Hill, S.E., merchant; G. J. Newman, The Ferns, Lordship-lane, S.E., merchant; Miss J. A. Newman, The Ferns, Lordship-lane, S.E.; Miss L. M. Owston, Ambleside, Forest Hill, S.E.; J. J. Ridley, 33, Old Broad-street, E.C., solicitor; A. J. Ford, 85, Commercial-road, Lambeth, secretary; T. W. Newman, The Ferns, Lordship-lane, S.E., secretary.

Nassau Manganese Mines, Ltd.—CAPITAL £20,000, in £1. shares. This company has been formed to adopt an agreement between P. Bautz and C. Waterford for the carrying on of the business of manganese merchants and dealers. The subscribers to the memorandum of association are:—C. Waterford, 70, Manor-st., Clapham, agent; W.

re—
Holland, 8 cks. Philipps & Graves
Sili, 16,785 bgs W. Montgomery
& Co.
re—
ance, 39 cks. W. Harrison & Co.
Holland, 23 pkgs. Philipps & Graves
nt—
many, 1 cs. T. H. Lee
affin Wax—
States, 1,396 brls. Anglo-American
Oil Co.
osphate Rock—
States, 2,621 t. Wyllie & Gordon
A. Hunter & Co.
gium, 50 B. Jacob & Sons
mce, 200 T. Farmer & Co.
h—
States, 33 tcs. L. & I. D. Jt. Co.
nbago—
many, 17 cks. B. Gallaway
85 cs. Prop. Scott's Wf.
Indies, 53 cks. Montgomery &
Workman
Holland, 1 B. Gallaway
don, 231 brls. R. G. Hall & Co.
" 325 J. Thredder Son,
& Co.
ssium Carbonate—
nce, 60 c. J. A. Reid
ssium Chloride—
many, 203 pkgs. Bessler, Waechter,
& Co.
ssium Hydrate—
nce, 4 pkgs. Spies Bz. & Co.
ssium Oxymuriate—
den, 50 pkgs. G. Boor & Co.
ssium Silicate—
land, 25 pkgs. Spies Bz. & Co.
Ice Stone—
many, 1 t. E. Fellingham
land, 12 c. J. Owen
Silver—
tussia, 300 btl. L. & I. D. Jt. Co.
I—
ates, 500 brls. Dussek Bz. & Co.
etre—
adies, 241 bgs. Ross & Deering
and, 132 c. Beresford & Co.
Ash—
and, 2,000 c. R. Waters
um Acetate—
ce, 27 pkgs. S. F. Waters
& Co.
um Bichromate—
and, 29 pkgs. A. J. Neal
um Hyposulphite—
and, 401 pkgs. R. W. Greeff
& Co.
h—
um, 70 pkgs. Leach & Co.
80 Magee, Taylor, & Co.
200 Sauer, Sons, & Co.
120 Arnati & Harrison
50 Page, Son, & Co.
and, 920 Volkins & Co.
2,305 Little & Johnston
40 Philipps & Graves
121 G. Rahn & Co.
ates, 50 Taylor Bz.
any, 2,240 L. & I. D. Jt. Co.
20 Horne & Co.
Phillipps & Graves
ine—
e, 143 bgs. Beresford & Co.
50 Chmbln's Wf. Ld.
um, 63 H. Hill & Sons
ric Acid—
nd, 23 pkgs. B. & F. Wf. Co.
4 Kirkpatrick & Co.
ntine—
ssia, 52 brls. C. B. Leighton
marine—
any, 46 pkgs. Steinhoff, Sons,
& Co.
nd, 20 cks. Hernu, Peron,
& Co.
e, 13 C. J. Langmead
nd, 8 pkgs. Haefner,
Hilpert, & Co.
um, 1 ck. Philipps & Graves
nd, 3 brls. W. Harrison & Co.
1 ck. G. Rahn & Co.
h—
e, 10 pkgs. Flageollet & Co.
ny, 4 L. & I. Dk. Co.
Lead—
ny, 16 cks. H. Lambert
5 A. Stedmann & Sons

Holland, 20 Burrell & Co.
" 30 A. & M. Zimmermann
" 20 A. Zumbach & Co.
France, 42 W. Harrison & Co.
Holland, 6 S. H. Willoughby
Wolfram Ore—
Queensland, 2 t. Wrightson & Son
Wood Pulp—
Sweden, 240 pkgs. W. G. Taylor
& Co.
" 160 C. Christoffersen
& Co.
" 750 Henderson, Craig
& Co.
U. States, 40
Holland, 480 G. F. Green & Co.
" 528 Daily Telegraph Co.
" 7,414 E. J. & W.
Goldsmith
" 108 H. Lambert
" 61 Thomas S. T. & L. Co.
" 60 Prop. Dowgate Dk.
" 60 J. Dickinson & Co.
E. Indies, 17 Walker, Munsee
& Co.
Norway, 540 E. J. & W.
Goldsmith
Germany, 610 Henderson, Craig
& Co.
H. Lambert
Zinc Oxide—
Germany, 110 brls. M. Ashby, Ld.
" 500 cks. Soundy
& Sons
Holland, 75 M. Ashby, Ld.
" 50 Burrell & Co.

LIVERPOOL.

Week ending March 28th.

Acetic Acid—
Rotterdam, 10 blns.
Antimony—
Valparaiso, 300 sks.
Antimony Ore—
Antofagasta, 192 sks. A. Gibbs, Sons
& Co.
" 602 Kleinwort,
Sons & Co.
" 237 Vivian, Younger
& Co.
Valparaiso, 469 743 bgs.
Kleinwort, Sons & Co.
" 428 sks. A. Gibbs
& Sons
Barium Sulphate—
Halifax, 1 brl. Davies &
Son
Barytes—
Antwerp, 140 bgs. 24 cks.
Bone Ash—
Zarate, 270 bgs. J. Nelson &
Sons, Ld.
Bone Meal—
Karachi, 273 bgs.
Rangoon, 400
Boracic Acid—
Leghorn, 12 cks. Pickford &
Co.
" 44
Borate of Lime—
Iquique, 507 sks.
Borax—
San Francisco, 862 sks.
Hamburg, 622 bgs.
Valparaiso, 1,350
Castor Oil—
Leghorn, 5 cs.
Calcutta, 738 Ralli Bz.
Chemicals (otherwise undescribed)
Baltimore, 50 cks.
Genoa, 1 cs.
Philadelphia, 63
Bremen, 3 4
Rotterdam, 1
Cod Oil—
Hamburg, 39 brls.
Colours—
Antwerp, 12 cks. J. T. Fletcher
& Co.
Hamburg, 5 cs.
Ghent, 41 13 bxs. J. T.
Fletcher & Co.
Antwerp, 2 cks.
Rotterdam, 6
Cottonseed Oil—
N. Orleans, 900 brls.
New York, 1,002
Boston, 100

Cream of Tartar—

Barcelona, 5 cks. Sachse
& Klemm
" 15 brls.
Dyestuffs—
Aigarrobilla
Coquimbo, 17 sks. Schintz & Co.
Argols
Oporto, 23 cks.
Patras, 7 cs. Papayanni
& Jeremias
Cochineal
Teneriffe, 35 bgs. Brown
Brs. & Co.
Hamburg, 10 bgs.
Cutch
Rangoon, 1,768 bxs.
Divi Divi
Hamburg, 1,948 bgs.
Extracts
New York, 25 brls. T. Atkins
& Co.
Fiume, 300 Oak Extract Co.
Philadelphia, 35 200 bxs.
Fustic
Tampico, 3,700 stks. D. Midgley
& Son
Colon, 458 ps. Widow Duranty
& Son
Vera Cruz, 698 Ledward,
Bibby & Co.
Gambier
Singapore, 1,584 bls. 1,310 bgs.
E. Boustead & Co.
" 3,374
Indigo
Calcutta, 248 chts.
Orchella
Lisbon, 100 bgs. 24 bls.
Sumac
Palermo, 400 bgs.
Valonia
Patras, 2 bgs. Barff & Co.
Farina—
Trieste, 100 bgs.
Glucose—
Newport News, 600 brls.
Glue—
Boston, 1 brl.
Trieste, 5 cs.
Naples, 4 bls.
Genoa, 24 cks.
Rotterdam, 4 bgs. Inglis
& Wolf
Infusorial Earth—
Hamburg, 33 bgs.
Limestone—
Ghent, 2 cs. J. T. Fletcher
& Co.
Antwerp, 8 crts. "
" 1 "
Manure—
Antwerp, 9 cks.
Mineral White—
Fiume, 200 bgs.
Molasses—
Matanzas, 150 bgs. J. T. Nick ls
& Co.
Paraffin Scale—
New York, 1,257 brls. Thompson
& Bedford
Baltimore, 214
Philadelphia, 100 cs.
Rangoon, 227 bxs.
Paraffin Wax—
Newport News, 107 brls.
Philadelphia, 100
Phosphates—
Antwerp, 5 cks.
Ghent, 550 t. 270 bgs.
Pitch—
Rotterdam, 28 cks.
Plumbago—
Antwerp, 3 bgs.
Genoa, 80
Potash—
Antwerp, 16 dms.
Pumice Stone—
Messina, 12 cs. 60 bgs.
Pyrites—
Huelva, 3,232 t. Matheson & Co.
Rosin—
Wilmington, 3,288 brls.
Boston, 1,300
Bordeaux, 2 cks.
Bayonne, 3,657
Salicylic Acid—
Hamburg, 1 cs.
Saltpetre—
Hamburg, 50 brls.
Soap—
N. Orleans, 1,840 brls.

New York, 88 cs. R. Crooks
& Co.
Genoa, 325 100 pkgs.
Soapstone—
Bordeaux, 200 bgs. G. G.
Blackwell & Co.
Genoa, 500 W. Harrison & Co.
Sodium Acetate—
Antwerp, 17 brls.
Starch—
Antwerp, 282 cs. J. T. Fletcher
& Co.
New York, 1,000 bgs.
Hamburg, 160
Philadelphia, 113 brls. J.
Howard
Antwerp, 220
Rotterdam, 437
Stearine—
Antwerp, 64 bgs.
Rotterdam, 14 cks.
Superphosphate—
Antwerp, 36 cks.
Tallow—
New York, 130 tcs.
Zarate, 384 cks. 489 pps.
Nelson & Sons, Ld.
Tar—
Wilmington, 1,000 brls.
Tartar—
Bordeaux, 25 cks.
Naples, 4
" 2 R. Powles
Tartaric Acid—
Bordeaux, 8 cks.
Trieste, 1 Clay, Dodd
& Co.
Tincal—
Calcutta, 240 bgs.
Trecle—
Philadelphia, 579 brls.
Rotterdam, 10 cks.
Ultramarine—
Rotterdam, 20 cks.
White Lead—
Rotterdam, 51 cks.
Wood Pulp—
Skien, 4 899 bls. H. Tyrer
& Co.
Zinc Oxide—
Antwerp, 105 brls. 25 cks.
New York, 50

MANCHESTER.

Week ending March 30th.

Acetanillide—
Rotterdam, 10 cks.
Asbestos—
Rotterdam, 2 cs.
Barytes—
Rotterdam, 12 cks.
Castor Oil—
Antwerp, 30 brls.
Colours—
Treport, 3 cks.
Rotterdam, 91 44 cs.
Ghent, 5 brls.
Antwerp, 11 10
Cottonseed Oil—
Rotterdam, 100 brls.
Dextrine—
Copenhagen, 155 bgs.
Dyestuffs—
Allzarine
Rotterdam, 44 cks. 15 pkgs.
Extracts
Treport, 40 cks.
Rotterdam, 18 1 cs.
Indigo
Calcutta, 282 chts.
Logwood
Progresso, 382 t.
Farina—
Copenhagen, 200 bgs. Brown, Geveke
& Co.
" 600
Glue—
Treport, 62 bls.
Rotterdam, 10 bgs. 1 bskt.
Antwerp, 20
Mineral White—
Bordeaux, 200 bgs.
Pitch—
Antwerp, 8 cks.
Potash—
Treport, 48 cks.
Soap—
Rotterdam, 2 cs.

Soda —	
Treport, 2 cks.	
Sodium Acetate —	
Treport, 18 cks.	
Sodium Phosphate —	
Rotterdam, 20 cks.	
Starch —	
Rotterdam, 81 cs.	
Tar Waste —	
Rotterdam, 5 cks.	
Tartar —	
Bordeaux, 1 tk.	
Rotterdam, 3	
Tartaric Acid —	
Rotterdam, 11 cks.	
Tin Oxalate —	
Rotterdam, 12 brls.	
Treacle —	
Copenhagen, 15 cks.	
Yarnish —	
Ghent, 1 brl.	
White Lead —	
Rotterdam, 14 cks.	
Wood Pulp —	
Skien, 2,186 bls	
Gothenburg, 6,057	W. Gallagher & Sons
Zinc Oxide —	
Antwerp, 2,138	
Antwerp, 20 brls.	

HULL.

Week ending March 30th.

Antimony —	
Hamburg, 11 cs.	Lothouse & Saltmer
"	5. Wilson, Sons, & Co., Ltd.
Asbestos —	
Genoa, 1 cs. 4 lbs.	
Barytes —	
Rotterdam, 69 cks.	Hutchinson & Son
Antwerp, 34	50 bgs. Bailey & Leatham
Bremen, 41	A. Sanderson & Co.
Camphor —	
Hamburg, 1 ck.	Wilson, Sons, & Co., Ltd.
Castor Oil —	
Lima, 30 cs.	Wilson, Sons, & Co., Ltd.
Leghorn, 30	"
Genoa, 30	"
Marseilles, 5	"
Chemicals (otherwise undescribed)	
New York, 1,531 bgs.	Wilson, Sons, & Co., Ltd.
Stettin, 28 brls.	"
Bremen, 1 ck.	Veltmann & Co.
Hamburg, 5 cks.	Wilson, Sons, & Co., Ltd.
"	2
Dunkirk, 6	"
Cod Oil —	
Christiania, 5 brls.	Wilson, Sons, & Co., Ltd.
Colours —	
Rotterdam, 11 pks.	Wilson, Sons, & Co., Ltd.
"	91 W. & C. L. Ringrose
Antwerp, 8 cks.	Wilson, Sons, & Co., Ltd.
Hamburg, 10 cs.	G. Malcolm & Son
Ghent, 12 cks.	"
Rotterdam, 6	28 pks. Hutchinson & Son
Cryolite —	
Copenhagen, 2 cks.	Wilson, Sons, & Co., Ltd.
Dextrine —	
Stettin, 330 bgs.	Wilson, Sons, & Co., Ltd.
"	30
Dyestuffs —	
Alizarine	
Rotterdam, 134 pks.	W. & C. L. Ringrose
"	9 brls. Hutchinson & Son
Argols	
Bordeaux, 41 bgs.	Rawson & Robinson
Valonia	
Marseilles, 106 t.	Knyppers, Outier, & Scott

Smyna, 611	
Farina —	
Ghent, 70 bxs.	Wilson, Sons, & Co., Ltd.
Stettin, 550 bgs.	"
"	50
Glucose —	
New York, 300 brls.	
Stettin, 10 cks.	
Glue —	
Dunkirk, 10 cks.	Wilson, Sons, & Co., Ltd.
Naples, 1 cs.	"
Hamburg, 60 bgs.	"
Stettin, 40	"
Lamp Black —	
Gothenburg, 30 cks.	Wilson, Sons, & Co., Ltd.
Mineral White —	
Bordeaux, 30 bgs.	
Minium —	
Antwerp, 8 cks.	Bailey & Leatham
Ochre —	
Marseilles, 75 brls.	
Paint —	
New York, 68 pks.	Wilson, Sons, & Co., Ltd.
Phosphate —	
Ghent, 500 bgs.	Wilson, Sons, & Co., Ltd.
Dunkirk, 786	"
Plumbago —	
Antwerp, 2 bgs.	Bailey & Leatham
Potash —	
Rotterdam, 20 cks.	Hutchinson & Son
Pumice Stone —	
Leghorn, 36 cs.	Wilson, Sons, & Co., Ltd.
"	39
Rosin —	
Bordeaux, 9 cks.	Wilson, Sons, & Co., Ltd.
Genoa, 9 cs.	"
Salt —	
Hamburg, 100 kgs.	
Saltpetre —	
Rotterdam, 2 cks.	Hutchinson & Son
Hamburg, 10 kgs.	Wilson, Sons, & Co., Ltd.
Soap —	
Marseilles, 7 cs.	Wilson, Sons, & Co., Ltd.
"	4
Sodium Nitrate —	
Iquique, 5,955 bgs.	
Starch —	
Bremen, 1,214 cs.	Veltmann & Co.
Stearine —	
Bergen, 2 brls.	Wilson, Sons, & Co., Ltd.
Antwerp, 13 bgs.	Bailey & Leatham
Talc —	
Genoa, 20 bgs.	Wilson, Sons, & Co., Ltd.
Tallow —	
Copenhagen, 5 cks.	Wilson, Sons, & Co., Ltd.
Tar —	
Dunkirk, 3 cs.	Wilson, Sons, & Co., Ltd.
Tartar —	
Bordeaux, 6 cks.	Rawson & Robinson
Treacle —	
New York, 100 brls.	
"	900 Wilson, Sons, & Co., Ltd.
Ultramarine —	
Rotterdam, 4 cks.	Hutchinson & Son
Yarnish —	
Hamburg, 2 drms.	Wilson, Sons, & Co., Ltd.
Verdigris —	
Marseilles, 1 brl.	Wilson, Sons, & Co., Ltd.
Waste Salt —	
Hamburg, 205 bgs.	Bailey & Leatham
White Lead —	
Rotterdam, 36 cks.	Hutchinson & Son
"	134 W. & C. L. Ringrose

Antwerp, 11	Bailey & Leatham
Wood Pulp —	
Hango, 46 bls.	Furley & Co.
"	112
Zinc Oxide —	
Antwerp, 50 cks.	Bailey & Leatham
Rotterdam, 141	Hutchinson & Son

GLASGOW.

Week ending April 4th.

Aniline —	
Rotterdam, 7 cs. 3 cks.	J. Rankine & Son
Aniline Oil —	
Rotterdam, 1 ck.	J. Rankine & Son
Antimony —	
Rouen, 6 cs.	
Camphor —	
Hamburg, 2 cks.	
Caoutchouc —	
Hamburg, 1 cs. 1 bg.	
Carbon Black —	
New York, 2 brls.	
Chemicals (otherwise undescribed)	
Hamburg, 1 cs. 6 cks.	
Rotterdam, 3 cks.	J. Rankine & Son
Colours —	
Hamburg, 2 cks. 1 cs.	
Rotterdam, 36 pks.	
Cottonseed Oil —	
New York, 30 brls.	
Dyestuffs —	
Alizarine	
Rotterdam, 19 cks.	J. Rankine & Son
"	44 pks.
Argols	
Bordeaux, 51 cks.	
Extracts	
Rouen, 20 cks.	
Nantes, 162	
Logwood	
Green Id., 320 t.	Mucklaw & Co.
Farina —	
Hamburg, 100 bgs.	
Gelatine —	
Rouen, 6 pks.	
Glue —	
Rouen, 10 bls. 22 cks.	
Hamburg, 20 bgs. 5	20 bsks.
Guano —	
Dyrefjord, 1,682 sks.	
Gypsum —	
Rouen, 250 bgs.	
Infusorial Earth —	
Hamburg, 48 bgs.	
Lamp Black —	
Gothenburg, 5 brls.	
Lead Acetate —	
Rotterdam, 26 cks.	J. Rankine & Son
Ochre —	
Rouen, 141 cks.	
Paraffin Scale —	
Philadelphia, 312 brls.	
Pyrites —	
Huelva, 3,222 t.	Tharsis Co.
Sodium Acetate —	
Rouen, 8 cks.	
Tallow —	
New York, 90 tcs.	
Tartar —	
Hamburg, 2 cks.	
Bordeaux, 13	
Treacle —	
Philadelphia, 1,000 brls.	
Ultramarine —	
Rotterdam, 2 cks.	J. Rankine & Son
Waste Salt —	
Hamburg, 485 cks.	
White Lead —	
Rotterdam, 179 cks.	J. Rankine & Son
Wood Pulp —	
Drontheim, 483 bls.	
Gothenburg, 708	
Christiania, 410	
Zinc Oxide —	
New York, 100 brls.	
Zinc White —	
Rotterdam, 374 cks.	J. Rankine & Son

TYNE.

Week ending March 30th.

Alum Earth —	
Hamburg, 17 cks.	Tyne S.S.
Barytes —	
Rotterdam, 22 cks.	Tyne S.S.
Antwerp, 400 bgs.	
Cryolite —	
Copenhagen, 2 cks.	
Glue —	
Hamburg, 30 bgs.	Tyne S.S.
Manganese —	
Rotterdam, 3 cks.	Tyne S.S.
Phosphate —	
Antwerp, 250 t.	Lange Chapin & Co.
Pyrites —	
Huelva, 1,672 t.	Son
Starch —	
Rotterdam, 44 cs.	Tyne S.S.
Tartaric Acid —	
Rotterdam, 8 cks.	Tyne S.S.
Ultramarine —	
Rotterdam, 1 ck.	Tyne S.S.
Wood Pulp —	
Laurvig, 120 bls.	
Gothenburg, 112 pks.	
Zinc Oxide —	
Rotterdam, 50 cks.	Tyne S.S.
Antwerp, 15 brls.	

GOOLE.

Week ending March 27th.

Alkali —	
Hamburg, 4 cks.	
Calais, 6	
Antimony —	
Boulogne, 1 ck.	
Caoutchouc —	
Boulogne, 3 cks.	
Colours —	
Hamburg, 5 cks. 13 cs.	
Ghent, 4	1
Dyestuffs —	
Alizarine	
Rotterdam, 19 cks.	
Fustic	
Hamburg, 221 bgs.	
Costa Rica, 1,172 t.	
Logwood	
Belize, 682 t.	
Jamaica, 958	
Dyestuffs (otherwise)	
Boulogne, 4 cs. 8 cks. 17 pks.	
Rotterdam, 1	10
Glucose —	
Rotterdam, 200 bgs.	
Glue —	
Rouen, 33 cks.	
Phosphate —	
Ghent, 815 bgs.	
Potash —	
Calais, 23 drs.	
Rosin —	
Savannah, 3,570 brls.	
Saltpetre —	
Hamburg, 14 cks.	
Antwerp, 141 bgs.	
Starch —	
Hamburg, 50 bgs.	
Waste Salt —	
Hamburg, 149 cks.	
Zinc Oxide —	
Antwerp, 25 brls.	

GRIMSBY.

Week ending March 30th.

Albumen —	
Dieppe, 15 cs.	
Hamburg, 5 cks.	
Aniline Dyes —	
Hamburg, 51 pks.	
Caoutchouc —	
Hamburg, 4 cs.	
Rotterdam, 3	
Chemicals (otherwise)	
Hamburg, 12 cs. 1 tk.	
Colours —	
Hamburg, 2 cs. 10 drs. 10 pks.	
Antwerp, 25	13
Farina —	
Hamburg, 100 bgs.	
Zinc Ashes —	
Antwerp, 11 cks.	

EXPORTS OF CHEMICAL PRODUCTS

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

ending April 3rd.

acid—	6 c.	£20
us Cake—	37 t.	£150
a (Liquid)—	10 t. 7 c.	£310
	55 drs.	100
	11	21
um Carbonate—	10 cs.	£18
	1 t.	34
um Chloride—	3 cks.	£22
	2	11
	7 c.	£10
	10	21
	13	23
um Sulphate—	111 t. 13 c.	£1,243
	151 12	1,762
	50	550
	113	1,255
	12	135
	20	227
	1 t. 1 c.	£18
	1	16
	2	33
g Powder—	1 t. 10 c.	£17
Acid—	7 cks.	£67
	4 t.	85
	1 t. 10 c.	£34
	5 cks.	36
Bay,	1	21
Bisulphide—	5 t. 1 c.	£66
Soda—	3 t. 4 c.	£26
	17	22
	2	6
ls (otherwise undes.)—	10 c.	£11
aneiro,	30 kgs.	73
	9 cks. 4 cs.	£27
	28	95
	4	15
on,	75 25	55
acid—	3	21
ne,	1 t.	£123
	2	213
um,	1 1 c.	7
	4	105
	5	61
	3	32
	3	19
	4	119
	1 2 3	242
am,	5	33
	5	34
oducts—		
rine	20 cs.	£1,145
	3 cks.	55
ne Dye	1 cs.	£46
	4	41
pl	10 puns. 48 cks.	£162
ilic Acid	120 cks.	£749
g,	2 drs.	£16
thaline	28 cks. 110 bgs. 4 cks.	£94
in Wax	10 cs.	£30
	467 bgs.	£158
re,	280 t. 22 brls.	540
nia,	60 flks.	15
	50 cks	25
	123	225
	220 dms.	£37
	52 pks.	26
oducts (otherwise undes.)—	7 pks.	£128
AS—	6 t.	£10
Sulphate—	10 t.	£160

Paris,	25	390
Christchurch,	2 10 c.	38
Cream of Tartar—		
Adelaide,	20 kgs. 20 cs.	£105
Melbourne,	2 t. 10 c.	162
Wellington,	10	33
Christchurch,	1 t. 5 kgs.	81
Sydney,	3	193
Disinfectants—		
Calcutta,	100 dms 12 cks.	£21
Algoa Bay,	3 t. 3 c. 4 pks.	34
E. London,	7 pks.	17
Delagoa Bay,	4 cs.	12
Trinidad,	13	23
Sydney,	160 drs. 2	58
Odessa,	194	88
Brisbane,	10	25
Melbourne,	141	164
Disinfectants and Acids—		
Trinidad,	3 cs.	£13
Oporto,	5	17
Hydrofluoric Acid—		
E. London,	3 cs.	£20
Magnesia—		
B. Ayres,	20 cs.*	£40
Manure—		
Rotterdam,	19 t. 19 c.	£85
Gothenburg,	138	311
Treport,	49 16	350
Jamaica,	5 12	68
Cullera,	548 9	3,542
Martinique,	24 13	91
Phosphorus—		
Sydney,	23 cs.	£222
Potash—		
Treport,	33 cks.	£500
Potassium Bicarbonate—		
New York,	1 t. 19 c.	£26
Potassium Bichromate—		
Calcutta,	5 kgs.	£12
Brisbane,	5 c.	11
Sydney,	1 t. 5 c.	45
Dunkirk,	4	377
Potassium Cyanide—		
Melbourne,	6 c.	£54
Potassium Nitrate—		
Canaria,	1 t.	£19
Potassium Prussiate—		
New York,	23 cks.	£543
Antwerp,	21	101
Salicylic Acid—		
Toronto,	5 cs.	£64
Saltpetre—		
Algoa Bay,	9 c.	£11
Cape Town,	10	14
Rockhampton,	1 t. 1	24
Pernambuco,	9 5	209
Sydney,	4	95
Salts of Lime—		
New York,	10 cks.	£105
Sheep Dip—		
Algoa Bay,	300 drs.	£83
B. Ayres,	6 t. 13 c.	250
Soda Salts—		
New York,	9 t.	£140
Sodium—		
Ghent,	2 t.	£250
New York,	3	444
Sodium Bicarbonate—		
Auckland,	1 t.	£7
Singapore,	7 c.	24
Algoa Bay,	18	7
Sydney,	1	24
Melbourne,	5	40
Sodium Bichromate—		
Dunkirk,	14 c.	£25
Sodium Carbonate—		
Natal,	1 t.	£15
Sodium Sulphate—		
Ghent,	170 t.	£170
Sulphur—		
Algoa Bay,	5 t. 19 c.	£53
Madeira,	2	19
Sydney,	1	8
Sulphuric Acid—		
Penang,	10 drs.	£13
Superphosphate—		
Calicut,	15 t.	£63
Rotterdam,	133 13 c.	481
Trinidad,	12 16	42
Tartaric Acid—		
Adelaide,	20 kgs. 20 cs.	£144
B. Ayres,	1 t.	99
Melbourne,	10 c.	46
Algoa Bay,	1	13

Calcutta,	2	12
Bombay,	3	14
Wellington,	3	15
Sydney,	2	186

LIVERPOOL.

Week ending April 3rd.

Albumen—		
New York,	5 t 2 c.	£309
Alkali—		
M. Video,	20 brls.	
Alum—		
Ibrail,	2 t. 17 c. 3 q.	£13
Casablanca,	2 10 2	12
Rabat,	2 11	12
Volo,	2 3 2	10
Ibrail,	2 13	12
Halifax,	1 19	9
Galatz,	2	13
Alexandria,	20 16 1	127
Tripoli,	2 8	17
Mersyne,	13 4 3	60
Ammonium Carbonate—		
Rangoon,	7 c.	£15
Havre,	1 t.	33
Ammonium Chloride—		
Adelaide,	12 c.	£20
Naples,	1 t. 3 1 q.	42
Hamburg,	10	18
Ibrail,	3	5
Genoa,	3 3	55
Tripoli,	15	27
Trieste,	2	71
Galatz,	17 3	33
Smyrna,	1 1 1	40
Lisbon,	9	16
Odessa,	1 5	46
Lagos,	1	2
Alexandria,	5	185
Bilbao,	1 6 3	50
Philadelphia,	39 7 3	1,020
Konigsberg,	1	25
Danzig,	6	7
Ammonium Sulphate—		
Leghorn,	22 t. 1 c. 2 q.	£253
Cartagena, Spa,	9 11 3	112
Columbian,	4 14	50
Las Palmas,	15	178
Valencia,	100 15	1,155
Asbestos—		
Cape Town,	1 cs.	
Barytes—		
Hamburg,	87 cks	
Bleaching Powder—		
Baltimore,	142 cks.	
Bombay,	15 cs.	
Boston,	446	
B. Ayres,	4	
Calcutta,	185	
Dunkirk,	18	
Malaga,	3	
Nantes,	16	
Naples,	34	
New York,	901 45 brls.	
Philadelphia,	136	
San Sebastian,	30	
Shanghai,	50 cs.	
Sydney,	25 t. 16 c.	£58
Boracic Acid—		
Portland, M.,	9 c. 1 q.	£14
Antwerp,	2 t. 17 3	73
Rotterdam,	2 6	65
Borax—		
Lisbon,	1 t. 1 c.	£20
Galatz,	10	9
Genoa,	2 2 3 q.	38
Antwerp,	16 1	322
M. Video,	12	12
Hamburg,	11 14 3	234
Portland, M.,	2 3	44
Matanzas,	2 4 1	46
Algoa Bay,	1	21
M. Video,	12 1	11
Barcelona,	2 19	54
Vera Cruz,	1 1	19
Odessa,	2 4	40
Rotterdam,	30 1 2	619
Calcined Magnesia—		
Constantinople,	1 cs.	
Calcium Chloride—		
Adelaide,	7 t. 4 c.	£17
New York,	20 1	42
Camphor—		
Panama,	3 cs.	
Caoutchouc—		
Rio de Janeiro,	1 cs.	

Carbolic Acid—		
Hamburg,	5 c.	£14
Philadelphia,	1 t.	34
Genoa,	12 1 q	28
Kobe,	3 10	168
Carbonic Acid Gas—		
Malta,	12 c. 2 q.	£49
Castor Oil—		
Panama,	100 bxs.	
Caustic Potash—		
Boston,	8 t. 18 c.	£225
Adelaide,	2 1	54
Lisbon,	1	30
New York,	17 17	450
Caustic Soda—		
Adelaide,	14 dms. 5 bxs.	
Bahia,	60	
Baltimore,	214	
Barcelona,	61 90 cks.	
Beyrout,	1	
Bilbao,	202	
Bombay,	102	
Boston,	230	
Bremen,	880	75 brls.
Calcutta,	60	
Cartagena, Sp.,	15	
Ceara,	50	
Christiania,	20	
Copenhagen,	6	
Comuna,	20	
Galatz,	274	
Genoa,	236	
Hamburg,	10	
Hiogo,	171	
Malaga,	36	
Manaos,	5	
Messina,	55	
M. Video,	223	
Montreal,	4	
N Orleans,	50	
New York,	375	100
Odessa,	80	
Oporto,	90	
Palermo,	30	
Pernambuco,	35	
Philadelphia,	185	20
Piræus,	29	
Pt. Natal,	22	
Rangoon,	35	
Rio de Janeiro,	4	
Rotterdam,	102	
San Francisco,	175	
San Sebastian,	51	
Santander,	20	
Sao Paula,	3	
Seville,	76	90
Sfax,	10	
Stettin,	10	
Sydney,	30	
Talcuano,	25	
Tarragona,	40	
Tunis,	15	
Venice,	43	
Volo,	10	
Wellington,	15 bxs. 3	
Yokohama,	100	
Chemicals (otherwise undescribed)		
Mersyne,	8 c.	£14
Beyrout,	1 t. 10	55
Boston,	6	510
Bombay,	4 10	167
Alexandretta,	1 10	57
China Clay—		
Bombay,	15 t.	
Boston,	583	
Philadelphia,	465 cks.	
Chloroform—		
Portland,	2 cs.	
Coal Products—		
Aniline Colour		
Portland,	3 cks.	
Aniline Oil		
Boston,	15 dms.	
Aniline Salts		
Boston,	20 cs.	
New York,	16	
Smyrna,	10 brls.	
Creosote Oil		
Lisbon,	600 brls.	
Mirbane Oil		
New York,	20 cs.	
Pitch		
St. Nazaire,	823 t.	
Sydney,	120 tins	
Tar		
Lagos,	10 brls.	
Philadelphia,	100	
Sierra Leone,	10 40 kgs.	
God Oil—		
New York,	5 cs.	

Copperas—

Philadelphia, 104 t. 8 c. £150

Santos, 4 14 3 q. 9

Copper Sulphate—

Vigo, 2 t. 10 c. £40

Bilbao, 2 3 q. 32

Piræus, 10 7

Bresil, 10 7

Bordeaux, 368 15 2 3,899

Odessa, 21 12 1 314

Tarragona, 124 12 1,863

Barcelona, 10 1 3 150

Alexandria, 1 3 15

Lisbon, 25 13 3 371

Nantes, 54 9 2 817

Seville, 9 7 67

Messina, 2 30

Genoa, 229 15 3,258

Catalonia, 4 66

Leghorn, 64 1 2 992

Naples, 15 8 2 225

Oporto, 14 7 2 222

Venice, 59 74 3 908

Savannah, 1 19 3 15

Patras, 1 1 15

Dried Blood—

Las Palmas, 8 t. £14

Farina—

Bombay, 5 bgs.

Gelatin—

Boston, 100 bgs.

New York, 100

Glue—

Alexandria, 10 bds.

Calcutta, 1 ck.

Guanos—

Las Palmas, 40 t. £400

Barbadoes, 200 2 c. 2,000

Valencia, 30 206

Gypsum—

New York, 36 t. 8 c. £99

Iron Oxide—

Genoa, 14 t. £98

Gijon, 2 11 c. 1 q. 15

Lead Acetate—

Calcutta, 3 c. £6

Litharge—

Bilbao, 2 brls.

Magnesia—

Havre, 50 cks.

Magnesium Chloride—

Bombay, 12 t. 12 c. £28

Magnesium Citrate—

Valparaiso, 5 cks.

Magnesium Sulphate—

Malaga, 13 brls. 5 c. 2 q. £2

Halifax, 20

Paris, 8 cks.

Piræus, 8 cks.

Manganese—

Marseilles, 5 cks.

Manure—

B. Ayres, 15 t. 5 c. £180

Antwerp, 37 13 1 q. 130

Teneriffe, 1 12 12

Cherbourg, 314 7 3 895

Marseilles, 40 5 241

Ochre—

Bilbao, 4 cks.

Hamburg, 25 bgs.

Rotterdam, 65

Paint—

Alexandria, 160 kgs.

Barcelona, 2 cks.

Bombay, 50 dms.

Cadix, 2

Calcutta, 1 br. 400 6

C. C. Castle, 40

Cartagena, Sp., 25

Cassia, 2

Genoa, 100 2

Higo, 4 cks. 4 3

Hong Kong, 80

Husson, 4 94

Ipswich, 2

Kurrachee, 22

Lagos, 25

La Libertad, 100

Las Palmas, 24

M. Video, 12

New York, 9

Old Calabar, 7 cks.

Para, 12

Pt. Said, 21 kgs.

Rangoon, 7

Rio Nunez, 45

Rotterdam, 13 pkgs.

St. John's, N'd., 1 cks.

Sierra Leone, 100 kgs.

Singapore, 24

Talcahuano, 40 brls.

Trieste, 10 cks. 60

Tripoli, 54

Valparaiso, 90

Painters' Colours—

Aarhus, 9 cks.

Antwerp, 24

Baltimore, 105

Bilbao, 10 10 brls.

Bombay, 30 dms. 630 kgs. 24 cs.

B. Ayres, 10 50

Calcutta, 110 8

Cartagena, Sp., 1 1

E. London, 100

Galatz, 6

Hamburg, 1 br. 1

Lisbon, 60 dms. 50 18

Malaga, 10 10

Manaos, 1 2 15

Maranhão, 40 18

Matanzas, 3

New York, 410

Odessa, 108 27

Para, 50 16

Seville, 40 420

Valparaiso, 100 1

Vera Cruz, 2

Yokohama, 123

Paraffin Wax—

Odessa, 50 bgs.

Pernambuco, 60 2 cs.

Venice, 60

Phosphorus—

Pernambuco, 1 c. £14

Higo, 57 cs. 545

Shanghai, 15 150

Picric Acid—

New York, 1 t. 2 c. £95

Plumbago—

Carril, 1 ck.

Potassium Bichromate—

Piræus, 15 c. £78

Bilbao, 1 t. 6 1 q. 57

M. Video, 10 20

Potassium Carbonate—

Boston, 9 t. 10 c. £173

Potassium Chlorate—

Hamburg, 2 t. £100

Bilbao, 1 40

Carril, 2 80

Riga, 1 48

Rostock, 1 56

Shanghai, 3 5 c. 122

Philadelphia, 5 188

Rotterdam, 5 15

Oporto, 1 15 70

Havana, 1 10 60

Higo, 50 kgs. 95

New York, 31 5 1,344

San Sebastian, 10 20

Ghent, 2 48

Naples, 2 10 118

Venice, 10 25

Naples, 2 12 132

Rosin—

Hamburg, 10 brls.

Rotterdam, 20

Salt—

Accra, 12 t.

Adelaide, 600 19 c.

Akassa, 55

Bahia, 22

Bakana, 35

Baltimore, 300

Barbadoes, 100

Belize, 22

Benin, 6

Boston, 218

Brisbane, 400

B. Ayres, 17 2

Calcutta, 8 796 2

Cameroons, 52

C. C. Castle, 20

E. London, 5

Gd. Bassa, 20

Halifax, 200

Hamburg, 100

Lagos, 25

Melbourne, 185

Miramichi, 250

Monrovia, 5 9

N. Orleans, 100

New York, 30

Noqui, 8

Old Calabar, 42 15

Opobo, 30

Portland, 98 11

Rio de Janeiro, 20 30 cs.

Salt Pond, 20

Sinoe, 5

Sydney, 50

Trinidad, 34 15 1/2

Winnebah, 2 10

Salt Cake—

Newport News, 106 t. 4 c. £97

Antwerp, 50 2 107

Saltpetre—

Cadedello, 1 t. £28

Sheep Dip—

Leghorn, 2 cks. £10

Slag—

Deli, 4 t. £8

Nantes, 30 45

Soap—

Accra, 175 bks. 1 cs.

Akassa, 51

Alexandria, 21

Algoa Bay, 1,600 53

Anamaboe, 150

Antigua, 70

Antwerp, 120 1,800

Arim, 70

Barbadoes, 1,080 2

Batavia, 2,000

Benin, 100

Bombay, 1,390

B. Ayres, 2

Calcutta, 3 250 bds.

C. C. Castle, 162

Cape Town, 2,525

Chama, 50

Curacao, 325

Delagoa Bay, 711

Dominica, 20

Durban, 500

E. London, 2,405 31

Elmina, 156

Gibraltar, 549

Halifax, 225

Havre, 450

Hong Kong, 627

Johannesburg, 50

Kurrachee, 500 10

Lagos, 50 1

Las Palmas, 1,200

Macassar, 500

Manaos, 600

New York, 484 10

Old Calabar, 590

Opobo, 1,050

Para, 450

Pt. Elizabeth, 1,790 40

Pt. Natal, 560 35

Rangoon, 250 4

Rotterdam, 773

St. John's, N'd., 60

St. Lucia, 205

Salt Pond, 56

Sapelli, 150

Shanghai, 5 736

Sierra Leone, 75

Singapore, 1,500

Teneriffe, 416

Trinidad, 500

Vera Cruz, 1

Soda Alkali—

Leghorn, 36 brls.

Naples, 60

Odessa, 50

Para, 30

Seville, 20

Wellington N.Z., 10

Soda Ash—

Alexandria, 54 brls.

Antwerp, 600 bgs. 10

Bahia, 10

Baltimore, 5,522 159 cks.

Barcelona, 275 tcs.

Bombay, 12

Bordeaux, 10

Boston, 600 78

Brisbane, 201

Bruges, 20

Calcutta, 50 182

Cadiz, 4 26

Genoa, 10 10

Ghent, 100 6

Hamburg, 10 37

Higo, 300 kgs. 353

Maranhão, 25 20

M. Video, 25 20

Montreal, 560

Naples, 150

New York, 7,276 244

Oporto, 210 tcs.

Philadelphia, 3,572 112

Rio de Janeiro, 277 tcs.

San Francisco, 535 30

San Sebastian, 956 tcs.

Valparaiso, 25 20

Varna, 25 15

Wellington, 161 225

Yokohama, 161 225

Soda Crystals—

Boston, 84 brls.

B. Ayres, 50 kgs. 30

Calcutta, 34 31

Dunedin, 40

Gibraltar, 20

CHESTER.

Week ending April 3rd.

1 ck.	
33 kgs.	
13 brls.	
um Carbonate—	
4 kgs.	
20	
gen, 52	
um Sulphate—	
1,437 bgs.	
Oil—	
2 dms.	
1 3 brls.	
12	
7 brls. 5 cts.	
27 dms.	
Acid—	
10 cs.	
Soda—	
7 dms.	
50	
ustian, 30	
ls (otherwise undes.)—	
10 cks.	
Salts—	
30 cks.	
72 cks.	
Oil—	
11 brls.	
5	
Wax—	
70 bgs.	
223 t.	
1,659	
Silicate—	
20 cks.	
ustian, 39	
65 cks.	

HULL.

Week ending March 30th.

um Sulphate—	
475 bgs.	
ag—	
633 t.	
ag Powder—	
107 cks.	
84	
Soda—	
4 dms.	
71	
75	
3	
ls (otherwise undescribed)	
21 cs. 1 ck.	
am, 20	
nia, 2	
40	
7 68 pks.	
urg, 9	
2 16	
g, 145	
30	
49 130 pkgs.	
ark, 40	
50	
eed Oil—	
373 c.	
623	
urg, 17	
g, 1,733	
am, 1,774	
118	
er, 115	
ts (otherwise undescribed)	
4 cs.	
18 cks.	
32 cks.	
Oil—	
42 c.	
200	
118	
114	
552	
nia, 84	
nsand, 38	
sim, 162	
rg, 276	
am, 27	
er, 27	

Mineral White—

Ghent, 10 cks.	
Paint—	
Bergen, 119 kgs.	
Painters' Colours—	
Antwerp, 3 cs. 46 cks.	
Boston, 78 10 pks.	
Christiania, 2 72 dms.	
Danzig, 29 100 pkgs.	
Ghent, 4	
Hamburg, 1 4	
Harlingen, 1	
New York, 110 20	
Rotterdam, 5 3	
Pitch—	
Christiania, 20 cks.	
Rotterdam, 37 t.	
Antwerp, 236	
Soap—	
Drontheim, 40 cs.	
Tallow—	
Bremen, 34 kgs.	
Tar—	
Antwerp, 6 cks.	
Amsterdam, 17	
Christiania, 1	
Rotterdam, 14	
Treacle—	
Bergen, 25 cks.	
Christiansund, 55	
Drontheim, 15	
Varnish—	
Antwerp, 9 cks. 3 dms.	
Christiania, 1 cs.	
Danzig, 1 4	
Gothenburg, 1	
Ghent, 1	
Hamburg, 1	
Harlingen, 1	
Rotterdam, 5	
Stettin, 1	

GLASGOW.

Week ending April 4th.

Ammonium Sulphate—	
Cullera, 30 t. 3½ c.	
Kingston, Jam., 6	
Nantes, 10 7½	
Tegal, 4 9½	
Valencia, 204 5½	
Italy, 69 9½	
Hamburg, 50 15	
Asbestos—	
Yokohama, 4½ c.	
Bleaching Powder—	
Shanghai, 5 t.	
U.S.A., 5 12 c.	
Calcutta, 39	
Caustic Soda—	
Mauritius, 4 t. 10½ c.	
B. Ayres, 12 17½	
Coal Products—	
Benzine	£63
France, 71	
Creosote Oil	£920
France, 75	
Naphtha	£70
France, 5 t. 6¼ c.	
Bordeaux, 5	
Pitch	£54
Bombay, 370 t. 18¾ c.	
France, 64 8	
Oporto, 157 14	
Italy, 421 12	
U.S.A., 284	
Bordeaux, 279 brls. 100 cks.	
Bombay, 2 t. 5 c.	
Hamburg, 81 cks. 80 rnlts.	
Bombay, 222 227 brls. 227	
Karachi, 222 227 brls. 227	
Coal Tar Products (otherwise undescribed)—	
Rotterdam, 41 t.	
Copperas—	
Bombay, 18 t. 17 c.	
Dyestuffs—	
Aniline	£59
Calcutta, 3 t. 19½ c.	
Extracts	
Canada, 3 t. 19½ c.	
Farina—	
Oporto, 5 t.	
Rio de Janeiro, 2 1¾ c.	
Linseed Oil—	
Canada, 10 t. 6¼	
Mauritius, 2 9	
Magnesium Sulphate—	
Rio de Janeiro, 8 t. 8 c.	

Manure—

Callao, 150 t. 5½ c.	
Gothenburg, 49 5	
Kingston, Jam., 11	
Oporto, 10 10	
Valencia, 44 18½	
Italy, 19 14	
Mauritius, 415 8¼	

Paint—

Alexandria, £88	
Bombay, 45	
Cairo, 30	
Mauritius, 572	

Painters' Colours—

Bangkok, £61	
Singapore, 77	
Calcutta, 189	

Paraffin Wax—

Barcelona, 12 t. 4 c.	
Bordeaux, 8 3½	
Hio, 2 9¼	
Jamaica, 1 6	
Spain, 1	

Potassium Bichromate—

Barcelona, 22 t. 16¼ c.	
Hio, 5 5½	
Antwerp, 6 13½	
U.S.A., 33 3¼	
Jamaica, 1	

Potassium Prussiate—

U.S.A., 9 t. ½ c.	
-------------------	--

Rosin Oil—

Rotterdam, £37	
----------------	--

Salt—

Mauritius, 204 t. 16¼ c.	
--------------------------	--

Soap—

Dry Harbour, 1 t. 7½ c.	
Montego Bay, 10	

Sodium Bichromate—

Barcelona, 13 t. ¾ c.	
Antwerp, 4 1½	

Starch—

Rio de Janeiro, 2 t. 8¼ c.	
----------------------------	--

Sulphuric Acid—

Mauritius, 1 t. 17½ c.	
------------------------	--

Superphosphate—

Cullera, 39 t. 9 c.	
Italy, 19 14	

Tallow—

Alexandria, 1 t. 2 c.	£27
Oporto, 1 t. 2 c.	

Treacle—

Gothenburg, 2 t. 15¼ c.	£62
Halmstadt, 1	

White Lead—

Alexandria, 1 t. 5 c.	£15
Calcutta, 4 10	
Rio Grande do Sul, 1	

TYNE.

Week ending March 30th.

Alkali—	
Antwerp, 2 t.	
Christiania, 1 1 c.	
Rotterdam, 5 11	
Ammonium Chloride—	
Barcelona, 9 t. 2 c.	
Ammonium Sulphate—	
Stavanger, 10 t. 3 c.	
Antimony—	
Hamburg, 7 t. 10 c.	
Barcelona, 2 2	
Rotterdam, 7 10	
Arsenic—	
Barcelona, 2 t. 11 c.	
Barium—	
Antwerp, 11 t. 9 c.	
Blanc Fixe—	
Antwerp, 8 c.	
Bleaching Powder—	
Lisbon, 2 t. 12 c.	
Antwerp, 41 5	
Hamburg, 65 16	
Christiania, 1 9	
Barcelona, 14	
Rotterdam, 66 2	
Oporto, 69 2	
Trondhjem, 10 4	
Gothenburg, 1 3	
Hangesund, 7 19	
Carbolic Acid—	
Bergen, 7 c.	
Aarhus, 12	
Caustic Soda—	
Bilbao, 4 t. 18 c.	
Antwerp, 1 9	
Christiania, 7	

Barcelona, 51 3	
Gothenburg, 45 5	

Magnesia—

Lisbon, 15 c.	
Antwerp, 1	
Barcelona, 6 t. 15	

Manure—

Danzig, 500 t.	
----------------	--

Ochre—

Christiania, 1 t. 12 c.	
Trondhjem, 1 12	

Oxalic Acid—

Barcelona, 5 t. 2 c.	
----------------------	--

Paint—

Antwerp, 11 c.	
Rotterdam, 19	
Gothenburg, 1 t. 6	

Sheep Dip—

Bergen, 2 c.	
--------------	--

Slag—

Rotterdam, 87 t.	
------------------	--

Soda—

Svendsborg, 64 t. 11 c.	
Bilbao, 3 9	
Hamburg, 1	
Christiania, 10	
Rotterdam, 29 8	
Oporto, 5	
Hangesund, 1 1	
Constantinople, 70 15	

Soda Ash—

Lisbon, 12 t. 5 c.	
Antwerp, 10 9	
Christiania, 13	
Gothenburg, 119 16	

Sulphur—

Christiania, 50 t.	
Skien, 200	
Drammen, 150	
Gothenburg, 5	

White Lead—

Oporto, 2 t. 16 c.	
--------------------	--

GOOLE.

Week ending March 27th.

Benzol—	
Boulogne, 24 cks.	
Hamburg, 96	
Rotterdam, 50 23 dms.	
Chemicals (otherwise undescribed)	
Antwerp, 8 dms.	
Boulogne, 2 cks.	
Punta Arenas, 10 cs.	
Ghent, 1	
Hamburg, 12 bgs.	
Coal Products (otherwise undes.)—	
Antwerp, 2 cks.	
Boulogne, 52	
Ghent, 2	
Hamburg, 1	
Rotterdam, 195	
Dyestuffs (otherwise undescribed)	
Ghent, 6 cks.	
Rotterdam, 23	
Manure—	
Boulogne, 41 bgs.	
Bruges, 90	
Dunkirk, 182	
Painters' Colours—	
Boulogne, 1 ck. 1 cs.	
Ghent, 1	
Punta Arenas, 20	
Dunkirk, 25	
Pitch—	
Antwerp, 589 t.	
Dunkirk, 80	
GRIMSBY.	
Week ending March 30th.	
Chemicals (otherwise undescribed)	
Antwerp, 5 cks.	
Dieppe, 1	
Hamburg, 8 27 cs. 24 pkgs.	
Malmo, 4	
Rotterdam, 4 dms.	
Coal Products (otherwise undes.)—	
Dieppe, 155 cks.	
Hamburg, 1 cs.	
Rotterdam, 10 dms.	
Painters' Colours—	
Antwerp, 1 dm.	
Dieppe, 2 cks.	

PRICES CURRENT.

WEDNESDAY, APRIL 10th, 1891

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

Acids:—

	£	s.	d.
Acetic, 25% and 40%	per cwt.	6/6	9/6
" Glacial	"	40/-	
Arsenic S.G., 2000°	"	0 15	0
Fluoric	per lb.	0 0	3 3/4
Muriatic (Tower Salts), 30° Tw.	per bottle	0 0	10
" (Cylinder), 30° Tw.	"	0 3	0
Nitric 80° Tw.	per lb.	0 0	1 1/2
Nitrous	"	0 0	1 1/4
Oxalic	nett	0 0	3 3/4
Phosphoric, 1750°	"	0 0	11
Picric	"	0 0	10
Sulphuric (fuming 50%)	per ton	15	10 0
" (monohydrate)	"	5	10 0
" (Pyrites, 168°)	"	3	0 0
" " 150°	"	1	5 0
" (free from arsenic, 145°)	"	1	6 0
Sulphurous (solution) S.G. 1025	"	3	0 0
Tannic (pure)	per lb.	0 1	0
Tartaric	"	0 0	10 3/4
Arsenic, white powdered	nett per ton	14	15 0
Alum (loose lump)	"	4	15 0
Alumina Sulphate (pure)	"	4	12 6
Aluminaferic	"	2	7 6
Aluminium	per lb.	0 3	0
Ammonia, Anhydrous	"	0 1	3
" 280° B.	per lb.	0 0	3
" 24° B.	"	0 0	2 1/4
" Carbonate	nett	0 0	3 3/4
" Muriate	per ton	22	10 0
" (sal-ammoniac) 1st & 2nd	per cwt.	39/-	37/-
" Nitrate	per ton	40	0 0
" Phosphate	per lb.	0 0	8 1/2
" Sulphate (grey) London	per ton	10	6 3
" (grey) Hull	"	10	6 3
Aniline Oil (pure)	per lb.	0 0	5 1/4
Aniline Salt	"	0 0	4 3/4
Antimony	per ton	31	0 0
" (tartar emetic)	per lb.	0 0	7 1/2
" (golden sulphide)	"	0 0	10
Barium Chloride	per ton	6	10 0
" Carbonate (native)	"	3	5 0
" Sulphate (native levigated)	"	45/-	to 75/-
Bleaching Powder, 35%	nett	7	0 0
" Liquor, 7%	"	3	10 0
Bisulphide of Carbon	"	11	0 0
Chromium Acetate (crystal)	per lb.	0 0	6
Calcium Chloride	per ton	2	2 6
China Clay (at Runcorn) in bulk	"	15/-	to 30/-

Coal Tar Products and Dyes:—

Alizarine (artificial) 20%	nett per lb.	0 0	8
Magenta	"	0 3	9
Anthracene, 30% A, f.o.b. London	per unit per cwt.	0 1	1
Benzol, 90% nominal	per gallon	0 1	1 1/2
" 50/90	"	0 1	1
Carbolic Acid (crystallised 40°)	per lb.	0 0	6
" (crude 60°)	per gallon	0 1	6 1/2
Creosote (ordinary)	"	0 0	2
" (filtered for Lucigen light)	"	0 0	2
Crude Naphtha 30% @ 120° C.	"	0 0	5
Grease Oils, 22° Tw.	per ton	2	10 0
Pitch, f.o.b. Liverpool or Garston	"	1	13 0
Solvent Naphtha, 90% at 160°	per gallon	0 1	2
Lucigen and " Wells Oils	"	0 0	2 1/2
Copper	per ton	39	17 6
" Sulphate	"	15	5 0
" Oxide (copper scales)	"	39	0 0
Glycerine (crude)	"	16	10 0
" (distilled S.G. 1250°)	"	45	0 0
Iodine	nett, per oz.	0 0	9
Iron Sulphate (copperas)	per ton	1	5 0
" Sulphide (antimony slag)	"	2	0 0
Lead (sheet) for cash	"	11	5 0
" Litharge Flake (ex ship)	"	13	5 0
" Acetate (white)	"	24	10 0
" brown	"	14	10 0
" Carbonate (white lead) pure	"	16	0 0
" Nitrate	"	18	15 0

Lime, Acetate (brown)	per ton	5	12
" (grey)	"	8	10
Magnesium (ribbon and wire)	per oz.	0 3	
" Chloride (ex ship)	per ton	2	7
" Carbonate	per cwt.	1	17
" Hydrate	per ton	17	0
" Sulphate (Epsom Salts)	per ton	3	0
Manganese, Sulphate	"	17	0
" Borate	per cwt.	2	13
" Ore, 70%	per ton	4	5
Methylated Spirit, 61° O.P.	per gallon	0 1	
Naphtha (Wood), Solvent	"	0 3	
" Miscible, 60° O.P.	"	0 3	

Oils:—

Cotton-seed	per ton	17	15
Linseed	"	21	0
Petroleum, American	per gallon	0 0	
Stearine	per ton	25	10
Phosphorus (yellow)	per lb.	0 2	
" (red)	"	0 2	
Potassium (metal)	per oz.	0 3	
" Bichromate	nett per lb.	0 0	
" Carbonate, 90% (ex ship)	per ton	16	15
" Chlorate	per lb.	0 0	
" Cyanide, 98%	"	0 1	
" Hydrate (Caustic Potash) 80/85%	per ton	21	5
" (Caustic Potash) 75/80%	"	19	15
" (Caustic Potash) 70/75%	"	19	10
" Nitrate (refined)	per cwt.	1	3
" Permanganate	per cwt.	2	17
" Prussiate Yellow	per lb.	0 0	
" Sulphate, 90% (ex ship)	per ton	9	15
" Muriate, 80% (do.)	"	8	10
Silver (metal)	per oz.	0 2	
" Nitrate	"	0 2	
Sodium (metal)	per lb.	0 2	
" Carb. (refined Soda-ash) 48%	nett per ton	4	15
" (Caustic Soda-ash) 48%	"	4	0
" (Carb. Soda-ash) 48%	"	4	0
" (Alkali) 58%	"	3	10
" (Soda Crystals)	"	2	2
" Acetate (ex-ship)	"	14	0
" Arseniate, 45%	"	17	0
" Chlorate	per lb.	0 0	
" Borate (Borax)	nett, per ton	18	0
" Bichromate	per lb.	0 0	
" Hydrate (77% Caustic Soda) (f.o.b.) net pr. ton	"	9	10
" (74% Caustic Soda)	"	8	10
" (70% Caustic Soda)	"	7	10
" (60% Caustic Soda)	"	6	10
" (60% Caustic Soda, cream) (f.o.b.)	"	6	7
" Bicarbonate	"	6	10
" Hyposulphate	"	5	10
" Manganate, 30%	"	16	0
" Nitrate (95% ex-ship Liverpool)	per cwt.	0 8	
" Nitrite, 98%	per ton	29	0
" Phosphate	"	14	10
" Silicate (glass)	per ton	4	10
" (liquid, 100° Tw.)	"	3	10
" Stannate, 40%	per cwt.	3	2
" Sulphate (Salt-cake)	per ton	0	17
" (Glauber's Salts)	"	1	5
" Sulphide	"	8	0
" Sulphite	"	5	5
Strontium Hydrate, 100%	"	8	10
Sulphocyanide Ammonium, 95%	per lb.	0 0	6
" Barium, 95%	"	0 0	5
" Potassium	"	0 0	7
Sulphur (Flowers)	per ton	5	15
" (Roll Brimstone)	"	5	0
" Brimstone: Best Quality	"	3	12
Superphosphate of Lime (26%)	"	2	7
Tallow	"	23	10
Tin Crystals	per lb.	0 0	5
" English Ingots	"	0 0	4
Zinc (Spelter)	per ton	13	17
" Chloride (solution, 100° Tw.)	"	5	7

THE CHEMICAL TRADE JOURNAL

AND
OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

SATURDAY, APRIL 20, 1895.

Vol. XVI.

Contents.

PAGE	PAGE
..... 253	Tar and Ammonia Products 260
..... 254	Report on Manure Material..... 260
for March..... 255	Miscellaneous Chemical Market .. 260
..... 256	Liverpool Oil and Colour Market... 260
..... 256	The Metal Markets 260
rn Petroleum..... 257	Liverpool Mineral Market 260
..... 257	West of Scotland Chemicals 261
gs 257	Tyne Chemical Report..... 261
ing 257	New Companies..... 261
..... 258	The Patent List..... 261
mn 258	Gazette Notices..... 262
..... 259	Imports 262
isions 259	Exports 265
..... 259	Prices Current 268

RTISEMENT.

Wanted for Works, Tar and Ammonia
all particulars and salary required to "Z 148," *Chemical Trade*
chester.

Notices.

ations for the *Chemical Trade Journal* should be
heques and Post Office Orders made payable to—

OS., 32, Blackfriars Street, MANCHESTER.

Registered Telegraphic Address is—

"Expert, Manchester."

Subscription, commencing at any date, to the
Journal,—payable in advance,—including postage
world, are as follows:—

2 numbers)	12s. 6d.
ly (26 numbers)	6s. 6d.
(13 numbers)	3s. 6d.

lodge by making their remittances for subscriptions by
rice Order, crossed and payable to "Davis Bros."

s, and correspondence on all matters of interest to the
lied industries, home and foreign, are solicited.
ould condense their matter as much as possible,
only of the paper, and in all cases give their names
ot necessarily for publication. Sketches should be
eets.

s for the Editor, if intended for insertion in the
ue, should reach the office not later than Tuesday

Advertisements.

ments of Situations Vacant, Premises on Sale or To be Let,
ts, and Specific Articles for Sale by Private Contract are
ical Trade Journal at the following rates:—

is and under..... 2s. 6d. per insertion
ditional 10 words 6s. 6d. "

ents, Announcements in the Directory Columns, and all Adver
d, are charged at the Tariff rates, which will be forwarded on

intended for insertion in the current week's issue
office by Wednesday morning at the latest.

CURRENT TOPICS.

THE PETROLEUM BOOM.

THE long expected has at length happened, and the
scarcity of crude oil is causing the Standard Oil Com-
pany to put up their prices very rapidly.

We have frequently referred to their policy, the success of
which is now tolerably manifest. For a long time the grow-
ing scarcity of the crude oil has been obtruding itself, hence
the great anxiety of the Standard Company to crush all
competition before they themselves were compelled to
advance prices, and so make matters more promising for
those who were unable to trade profitably in the face of the
cutting prices inaugurated by the all-powerful "Standard."

Things did not fall perfectly "pat," however. Many weeks
ago an American paper revealed some of the internal anxiety
which existed, by stating that untiring search was being made
for new pools, while even the old fields were being re-
prospected. At the same time boring was being carried on
at places where there was even but a chance of finding oil.

The discovery of a new and important well at Baku
came recently as a further complication, since the
rapid advances in the price of oil bid fair to place
the Baku, and Scotch paraffin industries on a firmer
footing than has been possible for a very long time. In
regard to the latter industry in particular, there is every
prospect of the prevailing scarcity effecting infinitely more
good than half-a-dozen such flimsy arrangements as the
recent solid paraffin combine.

Moreover, there is at present but little ground for supposing
that the present values will decline again rapidly, for although
the latest reports from America state that more wells are
being sunk everywhere, there is very little said about more
oil. Meanwhile the price of crude continues to advance, the
current price being unparalleled in the history of the petro-
leum trade. In addition to these facts, it must be remem-
bered that after the past long spell of poor prices, holders of
crude will be in no hurry to see prices back again at their
former level.

There is, however, another aspect of this matter which
even more closely affects us in this country. The flash-point
question appears to have been buried *pro tempore*, but the
question arises whether it would not be wiser to take advan-
tage of the present situation, and decline the doubtful
American offer about wax, and so free the hands of those
who could and should be giving very valuable testimony
about this important question. When prices were
absurdly low, the faintest prospect of raising the
price to the poor consumer, for mere safety's sake,
formed a telling argument for the American advocates;
but now the price of petroleum is going up by leaps and
bounds, willy-nilly, the public may be persuaded to look
more closely at this question, which is of such vital

importance to hundreds and hundreds of hapless users. If we are compelled to pay a longer price, why not have a better and safer oil for our money, seeing that the cost of the superior oil has transpired during the recent discussion on the influence of a higher flash-point upon the cost of American oil? The fatality which occurred in the Metropolis a fortnight since should convince the most obdurate that danger lurks in petroleum of doubtful quality. If we are to purchase sudden death, let it be dirt cheap, but when we are asked to pay a price at which a perfectly reliable oil can be purchased, the matter becomes a different thing altogether. We shall also have to guard against another danger, the possible existence of which points to the necessity for a better administration of our petroleum laws. At Falmouth, recently, a cargo of reputed petroleum was received, distributed, and sold in the town, which on further inquiry turned out to be benzoline. With the increase in the price of crude oil, the temptation to make a mistake of this kind becomes very serious, and proportionate vigilance should be exercised.

THE CYANIDE GOLD EXTRACTION CASE.

This important case has apparently at last been concluded, as, so far, we have heard nothing of a further appeal. In regard to the decision it would be difficult not to feel sympathy for the unsuccessful plaintiffs. The later decision in the Court of Appeal is even more tantalizing than that of Mr. Justice Romer, since their Lordships, while recognising the import of the scientific evidence regarding the so-called selective action of weak solutions of cyanide, state finally, that, though possessing novelty and utility, the patent fails for want of conformity between the provisional and final specifications.

The experience of early inventors, who have suffered by not claiming enough in their specifications, has led to more recent inventors claiming as much as they possibly can. This particular case, however, shows that this can be overdone, as their Lordships held that the plaintiffs had made too wide a claim, and therefore dismissed the appeal. Although Mr. Justice Romer's decision is virtually reversed, yet the defendants eventually come off victorious, thanks to a purely legal point. It is truly a very ill wind that blows absolutely no good to anyone, and the gold mining companies will profit considerably by the decision. The law is the law, but it must at least be admitted hard, that a practical, commercial process, which has earned such good dividends for gold mining companies (since no less than two million pounds worth of gold has been recovered by this process which otherwise would have been entirely wasted) should be remorselessly stripped of all the powers and privileges by which a well-merited recompense has hitherto been secured, and thus left stranded and defenceless, not because it lacks novelty or commercial utility, but merely because the intricate technicalities of the law demand strict satisfaction and compliance with every detail, no matter how minute it be.

THE SWEDISH DUTY ON ENGLISH PENS.—At the last meeting of the Council of the Birmingham Chamber of Commerce, it was reported that a communication had been sent to the Foreign Office as to a proposed increase in the import duty on English steel pens into Sweden, asking Lord Kimberley to do what he could to prevent the extra impost. In reply, Lord Kimberley's secretary wrote that the increase had been sanctioned in both Chambers of the Swedish Parliament. The duty had not yet been sanctioned by the King, but the British Minister at Stockholm stated that it would probably come into force on January 1, 1896. The Chairman (Mr. R. P. Yates) said that the increase was practically from 8d. to 1s. 8½d. per kilo. This seemed very like shutting English steel pens out of the country. Under present trading rules England could not retaliate, and would simply have to submit.

Legal Intelligence.

SUPREME COURT OF JUDICATURE. COURT OF APPEAL.

(Before Lord Halsbury, Lord Justice Lindley, and Lord Justice A. L. Smith.)

THE CASSEL GOLD EXTRACTING COMPANY (LIMITED) v. THE CYANIDE GOLD RECOVERY SYNDICATE (LIMITED) AND OTHERS.

The deferred judgment of their lordships (*C. T. J.* 407, p. 158) the appeal made against the decision of Mr. Justice Romer was delivered last week, when Lord Justice A. L. Smith read the following judgment: Messrs. M'Arthur and Forrest's patent, for the infringement of which this action is brought, bears date July 16th, 1888, the provisional specification having been filed on October 19th, 1887, and it is improvements in extracting gold and silver from their ores by means of cyanide, for the present, we will take to be the application to the extraction of a small quantity of cyanogen-yielding substances in solution. The defendants deny the infringement and also asserted that the plaintiffs' patent was invalid—first, by reason that the discovery claimed contained neither novelty nor invention; and, secondly, reason of prior anticipation. A further point was raised, which is if the specification is to be read as the plaintiffs read it, the defendants contend that there is such disconformity between the complete provisional specification as to be fatal to the plaintiffs' claim. The defendants do not deny the utility of the plaintiffs' invention, but dispute the great commercial importance claimed for it by the plaintiffs. As regards the infringement, the defendants during the first five days of the trial strenuously insisted that the patent, which was said to be an infringement of the plaintiffs' patent, was for the extracting of gold from its ore by means of the cyanide operation of electricity and cyanide of potassium, and was therefore an infringement of the plaintiffs' patent, the electricity which they being a material part of their invention. When, however, witness, Mr. Herbert, was being cross-examined, and they challenged to refer to independent experiment and trial whether electricity as used was not in reality a myth, they refused to do so and admitted that they were infringers of the plaintiffs' patent, and thus this point became disposed of. In considering the question of want of novelty and invention it is necessary to state what we find to have been established in this case. It is proved that for many years prior to the patent in question it was common knowledge that cyanide of potassium would act as a solvent of gold in a finely-divided or precipitate condition in the same way as many other solvents would act, of which perhaps the strongest is aqua regia. There is no dispute as to this, and it is common ground that it was also, in our judgment, proved that prior to the plaintiffs' patent it was not known that cyanide of potassium would act as a solvent to extract gold from its ore. We leave out silver, for it has nothing to do with this case. The way in which gold had theretofore been extracted from the ore in which it was contained had been by subjecting the ore which had been crushed and which contained the gold, to a process which is called the amalgamation process, and then by subjecting that ore to a second process, called the cyanide extraction process, further gold was obtained. These two processes, however, left a residuum of gold in what are termed tailings, and this residuum could not by any known process at the time of the plaintiffs' patent be commercially obtained, and it went to the tailings and was lost. That a large amount of gold, which otherwise would have gone to waste has been recovered by means of the plaintiffs' patent (in conjunction with another patent which they took out prior to the filing of their complete specification herein), when applied at any rate to the tailings of South Africa has been clearly established, and indeed there is no evidence to the contrary. The object which the plaintiffs had in view, and which was attained by their two patents, was by the first to extract the gold from the crushed ore by getting the gold into a state of solution by means of the application of a solution of cyanide of potassium, and then by the second, which was for an improvement in precipitation of gold from solution, which was then well known, to extract the gold therefrom by means of a solution out of it. It is well known that ore which contains also contains baser metals, such, for instance, as copper, iron, and other metals, and the problem which had to be solved was to extract gold out of the crushed ore and get it into a state of solution without at the same time getting into that solution the other metals, or, in other words, how to extract gold from its ore and get it into a state of solution commercially free of the baser metals. The plaintiffs solved this problem appears to us upon the facts of this case established for it is proved that by their application of a very dilute solution containing an extremely small quantity of cyanide of potassium to the tailings of South African ore they

extracted gold therefrom in a commercially pure state, even ore contains only such extremely small quantities as two to weights of gold in a ton weight of ore. Professor Austen, stated that in the year 1893 some 500,000 ounces of gold were produced by the cyanide process and came to this country, a portion of which, but for the plaintiffs' process, would have been unproduced, and this represents a very large sum in value. Evidence was unhesitatingly given by, amongst others, Professor Dewar, Professor Austen, and Professor Crookes that the action of cyanide of potassium has been found to have the effect which the plaintiffs claimed for it—that is, of having "a solution so as to dissolve the gold in preference to the baser metals—that this was not known before." The evidence upon this point is as to this was feeble in the extreme. No evidence was brought out as to how it was that the plaintiffs brought out the results unquestionably did if they did not bring them about in the way they claimed. A suggestion was made at the Bar that the tailings were such that the gold therein could be easily extracted herefrom without the cyanide having the properties claimed for it, and it does appear in the evidence that the baser metals are more refractory than others. Mr. Horland, one of the defendants, however, stated that in the experience he had made he found that the base metals—the copper, and other metals as the case might be—went into solution with the gold, and that he had always found in his experience "a short time or a long time, with a strong solution or a weak solution, he got out both the base metal and the gold." We would point out that, though this was the result of Professor Dewar's experiments, it still remains to be answered how did he bring about these results, which they undoubtedly have? We can find no answer in the defendants' case. The defendants explain this paucity of evidence which they brought on their case by the selective action of small quantities of cyanide of potassium by asserting that they had been misled into the idea that the cyanide had abandoned his claim to the selective action. And in answer to an answer he gave to my brother Romer towards the end of the trial. But when the whole course of the trial is looked at in a manner of doubt that Sir R. Webster never gave up the case, and he has fully explained how it was that he came to the conclusion he did, and that it had no reference whatever to his case of this claim. We must add that even assuming the case, when he gave the answer which he did, that he abandoned his claim to the selective action, that would not be the meagre evidence which they gave upon this point, for Sir R. Webster's answer was not given until the whole of the case had been closed, and indeed not until he had come to almost the end of his reply upon a six days' trial. The selective action of the cyanide of potassium for the application of a very dilute solution of cyanide of potassium to an extremely small quantity of cyanide of potassium to ore gold has, in our judgment, been proved. But, it is said, that there was no novelty in what the plaintiffs have claimed, and the information which had been set forth in prior publications to establish that this was so, a series of published documents in evidence by the defendants commencing with a paper of Elkington in 1840, and ending with the specification of Elkington in 1887. They were in all 24 in number, and amongst them contained five specifications—viz., Elkington in 1840, Rae in 1881, Simpson in 1885, and Hanny in July, 1887. It is suggested that under any one of these specifications gold has been commercially extracted from its ore. But it is said that the plaintiffs (apart from the question of anticipation, which we do not hereafter), together with the other documents put in by the defendants, show such a state of general chemical knowledge of the cyanide of potassium would dissolve and thus extract gold from ore as it is found in nature, that no novelty exists in the invention. We do not propose to go through this list of documents, for it is sufficient to take those which the defendants point out as being the best for elucidating that for which they claim—viz., Faraday's paper in 1857, Rae's specification in 1860, Simpson's in 1878, and Simpson's specification in 1885. As regards the paper, it deals only with gold in its pure state in the form of leaf or film; it in no way deals with gold as found in ore combined with the other baser metals which are its ore. Faraday knew what many since, if not before, have known, that the cyanide of potassium was to some degree a solvent of gold, but he does not show its applicability or utility to the extracting of gold from the other baser metals as it exists in the earth. As regards the American patent, which was for treating auriferous and argentiferous ores, he declares that his invention consists in treating these ores with electricity for the purpose of separating the precious metals from the gangue. It is true that he uses chemical preparations, such as cyanide of potassium, in connection with the electricity, in such a manner that, by the combined action of the electricity and of the chemicals, the gold contained in the ore is first

reduced to a state of solution. He describes how he pours his chemicals upon the rock—i.e., the ore—and then applies his electric current. It appears to us, as far as this specification is concerned, that Rae might just as well have used *aqua regia*, or any other known solvent of gold in connection with his current of electricity, and brought about his desired result, which, however, as a fact, he never attained. Professor Crookes, under cross-examination, stated the reason why he thought Rae added his electricity was because he had got an imperfect solvent action, and he consequently added electricity. Sir Edward Clarke argued that the first process, as regards the solvent, sufficed, without the electricity; but where is the evidence of this? On the contrary, in our judgment, it is established in this case that, unless the solvent—i.e., the cyanide of potassium—is used in the extremely small quantities in solution as discovered by the plaintiff (and in Rae's patent it is unlimited) it is simply useless, for, as Professor Crookes and others pointed out, a strong solution attacks the baser metals without attacking the gold, whereas the action of a weak solution is feeble and *nil* on the baser metals, but attacks the gold. We now come to Dixon's paper, which was read before the Royal Society of New South Wales, in August, 1877. It was a paper as to the method of extracting gold, silver, and other metals from pyrites. It first deals with that which was and is a common knowledge—namely, that precipitated gold is soluble in cyanide of potassium if exposed to the air, and, after alluding to Rae's American patent and other matters, he makes this most significant statement. He says—"There being, therefore, no method by which the precious metals could be removed and the baser metals left, it remained to fall back on one of the first principals of metallurgy—viz., to remove the baser metals at the earliest stage if possible, and leave the precious metals as a residue." Now this is exactly what the plaintiffs by their invention have shown should not be done, for they remove the precious metals by their invention at the earliest stage, and leave the baser metals as a residue. And yet the defendants' witness, Vautin, as also Mactear, cite Dixon's paper as possibly the best publication they have to show what they want to establish as to prior general knowledge. In our judgment, this paper of Dixon's is cogent evidence in favour of the plaintiffs, and equally so against the defendants.

(To be continued).

IMPORTS AND EXPORTS FOR MARCH.

THE Board of Trade returns for the past month, though showing a slight improvement, can scarcely be considered altogether satisfactory. The imports of brimstone, tallow and indigo, show a notable increase respectively. The exports of alkali also show an advance.

IMPORTS OF FOREIGN AND COLONIAL PRODUCE

ARTICLES.	Quantities.	
	1894.	1895.
Margarine	Cwt. 106,746	80,093
Copper Ore and Regulus	Tons. 14,048	13,480
Pyrites	" 60,784	51,924
Tin	Cwt. 73,371	61,651
Alkali	" 7,126	8,737
Brimstone	" 28,652	46,360
Dyes, Coal Tar	℥. 36,074	63,201
Saltpetre	Cwt. 35,741	13,706
Petroleum	Gall. 14,008,835	18,801,423
Turpentine	Cwt. 6,799	47,183
Guano	Tons. 528	4,545
Nitrate of Soda	" 11,089	12,788
Paraffin	" 69,820	77,008
Rosin	Cwt. 77,234	16,397
Tallow and Stearine	" 72,779	322,697
Oil Seed Cake	Tons. 27,145	25,774
Wood Pulp	" 23,142	19,666

EXPORTS OF BRITISH AND IRISH MANUFACTURES.

ARTICLES.	Quantities.	
	1894.	1895.
Alkali	Cwt. 458,281	563,948
Cement	Tons. 36,411	28,616
Coal and Coke	" 2,383,889	2,464,913
Copper, all kinds	Cwt. 87,124	108,010
Iron and Steel	Tons. 196,309	205,707
Chemical Manures	" 35,758	26,723
Oils, seed	" 5,901	4,603
Salt	" 66,473	45,104

ing the rainbow, perfumes more odorous than the rose, intense than the sweetest nectar, and powerful antiseptics and remedies of incalculable value to the physician. On the other hand, the fascination of the field of scientific investigation in the study of coal tar derivatives is beyond description, and is appreciated by those who have had the privilege of working in this direction.

Advantages of chemistry that I have mentioned are those in which I had most personal experience, but other branches of chemistry exist which will admit of what I term college-treatment.

Editorial of "Oils, Colours and Material" for May 15th, 1894, said that "The boy who is trained as a chemist has not the opportunity of making a name for himself, but, what is more to the point, the opportunity of gaining knowledge that will always be sufficient to live comfortably upon. Many of those who enter chemistry make this mistake of neglecting to apply their knowledge to some specific trade or industry. A good, all-round knowledge of chemistry is an excellent thing, but it is in the application of it that makes it valuable. In the industries represented by the thousands of chemists employed, and their knowledge is chiefly in their intimate knowledge of the technic of the manufacture of paint, for instance, in which the chemist is invaluable. Here the knowledge of chemistry is in its application. Anyone having a knowledge of chemistry can resolve a paint into its component parts, but only by the use of the qualities of the paint can deduce any confirmation of value from such analysis. Hence the chemist who makes a special study of paint materials is the one who finds himself valued."

He has the "intimate knowledge of the technic of the trades" which comes after years of experience, but the inexperienced man often rises into an "authority" if he study what is on the subject, and keep himself abreast of the times by the technical journals devoted to the particular industry. Valuable suggestions may often be obtained by consulting the specialist. I am, of course, not advocating any infringement of the law, but it occasionally happens that among some of the wild "Improvements in," &c., a sympathetic chord will be struck which will lead to real success.

Conclusion to our manufacturers. Gentlemen seeking the young fellow to superintend some chemical works may, care, save themselves from being imposed upon. With a few simple practical examinations of the Institute of Chemistry or the Guilds Technological Institute no difficulty should be found in selecting a competent person. Moreover, if he has had experience in methods of research, it will soon be found, as a rule, that the employer will benefit from his services.

And most successful chemical manufacturers are availing themselves of all the possible scientific assistance. Let those, then, who are working in the old ruts where operations are carried out ignorantly, follow in the wiser path of our German colleagues, as before mentioned, I feel sure, will be to the advantage of all concerned.

Die durch Irrthum zur Wahrheit reisen,
Das sind die Weisen;
Die aber beim Irrthum beharren,
Das sind die Narren.

CANNING TOWN PETROLEUM FATALITY.

MR. VIS, the coroner for the borough of West Ham, opened an inquest at Canning Town last week concerning the deaths of three children who perished in the fire which occurred on the premises of Mr. Fox, No. 12, Hermit-road, Plaistow, on the night of the 10th inst.

The names of the victims were given as Ethel Mary Fox, aged 10; Ellen Maud, 10; Edith Marion, 8; Frances Gwendolyn, 3; Emily Norah, 3. Formal evidence of identification was given by Leonora Winifred Blanche Fox. She said she had been married to Mr. Fox about seventeen months.—The Coroner: Then the child that has been burned is not yours?—Witness: No, my step children. Witness, continuing, said that about ten past ten on Friday night week the children had all gone to bed, aged 10, having only gone about ten minutes. They all slept in a room on the second floor, Ethel, Gwendolyn, and Emily in one room, and Edith in another. Her husband had gone to the rear of the premises. She had previously told her husband that she was using baby powder. Witness went into the shop to produce a petroleum lamp was standing on the counter at the time this exploded, setting the shop alight.—Richard Fox said he had only been at the rear of the premises about three or four minutes when he heard his wife utter a loud scream. He heard

her say, as far as he could remember, "The shop is on fire; the lamp is broken!" He then rushed into the house from the yard, and met his wife carrying the baby. He saw that the place was alight. His wife said, "I knocked the lamp over while getting a powder for baby." He ran up the stairs and raised an alarm from the front window, which he opened. Someone outside said, "Come down and open the street door." He replied, "I cannot get to the door; that is impossible." He turned back, and was going towards his children's room, when on reaching the landing he became overpowered by the dense smoke, and fell down the stairs. He lost his senses for some seconds, and then crawled along to the room from which the baby had been rescued, and out upon the tiles. He was then rescued by two men.—A juror: Why did you not go into the children's room before going to the window to give the alarm? It did not occur to me.—A juror: It is very unfortunate that you acted so. Are you insured? Yes.—Children's lives insured? Yes.—Witness added that he had never been in a fire before.—The Juror: You must have known that you could not get much help from the outside just at that moment.—Witness: I was shouting and banging at the doors all the time, and my poor wife was screaming.—How long was it before you thought of the children; you could easily have dropped them out of the window. You also had to pass the door twice?—Witness: I thought it best to raise the alarm.—The inquiry was adjourned for further evidence, and to enable the jury to view the premises. A post-mortem examination is also to be made, as it is rumoured the children had been drugged.

Parliamentary Gleanings.

THE GAS CYLINDER EXPLOSION.

In the House of Commons on Wednesday, last week, in reply to Mr. Austen Chamberlain (for Mr. Powell-Williams), Mr. Asquith said: I have already answered a question upon this subject and have received a report from an expert upon the matter. I intend to invite further expert inquiry. It is reported to me as most probable that the explosion was not due to an imperfectly welded cylinder, but was caused by the ignition of an explosive mixture which no cylinder would stand, however perfectly it had been tested. I will, however, request those who are to be consulted upon this question to inquire how far the Government test would be a safeguard, and I will carefully consider the suggestion thrown out by the hon. member.

CHROME LEAD POISONING.

AT the last meeting of the Manchester Chamber of Commerce a series of resolutions of the Chemical Sectional Committee was laid before the Board, illustrated by a number of sample hanks of yarn which had been dyed by Mr. Levinstein, chairman of the committee—some with chrome lead colours, the rest with other colouring materials, for the purpose of comparison. The Board substantially adopted the resolutions of the Sectional Committee, as follows:—1. "That the drying of goods with chrome lead colours, and especially the handling of goods dyed with these colours, is injurious to the people employed, unless special provisions are made and due precautions taken, and unless the workpeople heartily co-operate in making use of the appliances provided for their protection." 2. "That in view of the fact that the wearing of goods next to the skin coloured wholly or partially with chrome lead dyes under certain conditions may be injurious to health, it is desirable to substitute these dyes by others derived from innocuous colouring matters of similar colouring properties." 3. "That it would be an injustice to the dyeing trade to place any restrictions upon the colouring of goods by chrome lead colours unless such restrictions are also extended at the same time and to the same degree to the importation to this country and its colonies of such coloured goods, also to the dyeing trade of India, in which country very considerable quantities of goods are so dyed; one dyeworks alone being stated to turn out 20,000lb. of yarn per day dyed with chrome lead colours." 4. "That the attention of merchants and their clients be called to the injurious effect of chrome lead colouring materials, and to the existence of others less injurious to health, producing similar colour effects, of which there are several."

GOLD PRODUCTION.—The Crown Reef Gold Mining Company, Limited, report the following results for March:—Yield in smelted gold from 120-stamp mill, 5,742 ounces; yield from 120-stamp cyanide works treating tailings and concentrates produced by the mill, 3,403 ounces; yield from accumulated stock of tailings and slimes, 801 ounces; total, 9,946 ounces. The Henry Nourse Gold Mining Company report crushing for March (30 days): 2,265 tons, produced 1,610 ounces; cyanide works, 1,600 tons, produced 607 ounces; total, 2,217 ounces.

Our Book Shelf.

SULPHURIC ACID AND ALKALI. Vol. ii. Second Edition. By Dr. George Lunge. London: Gurney and Jackson. 1895. pp. 920, with 305 illustrations.

This volume describes the manufacture of saltcake, hydrochloric acid, and Leblanc soda in all its intricacies, and appears at a time when so many jeremiads have been written upon the process of Leblanc as to make such a treatise interesting, even if only in an historical sense. The account of natural soda and other native alkali products forms a very readable portion of the work, and, with cheaper fuel, it would appear that we may some day have a formidable rival in these articles. Coming to the description of the various processes themselves, we are strongly of opinion that it would be wise to eliminate many of the antiquated methods from a new edition, as the description of them can serve no purpose but history, and even history would not be well served with an incomplete record.

Prof. Lunge must, however, be congratulated upon the vast amount of useful information he has culled upon the various processes described with so much detail. If he has erred by pushing his opinions so vividly to the front, it must be on account of the invulnerability of the position he has taken up, and his readers will no doubt excuse the *ego* from one who has done so much good in elucidating many obscure reactions that occur in manufacturing chemistry. The historical notes of all the processes concerned show that great care has been taken in hunting up all available records, but, with reference to caustic soda, it may be as well, once for all, to pull the sheet from off the Ralston bogey for ever. Most chemists writing about caustic soda mention Ralston. Even Prof. Lunge says in the work before us (pp. 738-739): "He" (Ralston) "obtained for the first time *white* caustic soda." Now Ralston was a Cheshire farmer, and knew as much about caustic as we do of the "man in the moon," but he was a friend of McBryde's at the time when Pauli was chemist at his works, and at the date, moreover, when Pauli had made his first batch of *white* caustic soda. McBryde did not want the jealous eyes of his confrères directed to his works, so the patent was taken out in the name of Ralston. To us there is not the slightest doubt that this was the first *white* caustic ever made. Roberts, Dale, & Co. were at this time the makers of the best brand of solid caustic soda in the market, nevertheless it was but "cream," yet so good a cream as to be almost *white*. There are many amusing little incidents connected with the early manufacture of *white* caustic soda we could relate, but space forbids: it may fall to our lot some day to recount a few of them.

One of the most interesting portions of the book is the masterly research on the action of nitrate of soda upon sodium sulphide. Prof. Lunge has clearly established the various reactions that take place, under certain conditions, between these two substances and their products of secondary decomposition; it remains for observers to determine whether these conditions always obtain in the process of manufacture usually adopted. The manufacture of caustic soda has undergone a remarkable evolution since 1875, when Davis published his monograph upon it. Two decades back is a far cry in these chemical days. What the next decade will do for this industry is still a matter of doubt, but there are signs of still further evolution, to be brought about by the agency of ammonia soda. Such considerations clearly show us that while this treatise may indicate how caustic soda has been made in the past, it would scarcely do to say that the process details will continue unaltered, even in the near future, and this holds good for Leblanc soda-ash, which is only kept on its legs by reason of the idiosyncracies of the buyers in certain markets.

On page 565, in giving the analyses of black ash by Davis (from whose paper of 1875 the information on caustic soda seems largely drawn) the author writes: "The following analyses by Davis too minutely specialise some constituents for which exact analytical methods are not known." To us this paragraph is incomprehensible, as we cannot imagine that the professor himself would be unable to determine the amount of any one of the named constituents of black ash given on the *foregoing* page if he were asked to do so.

Another error on page 776 requires correcting, and it is surprising to us that it has been allowed a place in this edition. So intent has the author been in promulgating his own explanations that he has been led, not only astray, but even to offer an explanation of a statement which has never existed. We refer Dr. Lunge to lines 26-29 on page 776, and beg him to compare with the original.

The costs of production given in this work are very antiquated, and need much in need of revision. They are quite useless at the present day, when materials have fallen to such an exceptional degree, while labour, capital charges, and other incidental expenses have largely increased. Still, the work before us deserves the highest commendation as an earnest attempt at usefulness, and will no doubt find a place in every student's library.

Paper-Makers' Column.

BLEACH STORAGE EXPERIMENTS. [BY CLAYTON BRADLE.]

As far as I can discover, no experiments have been done to determine the rate at which solutions of bleaching powder lose their available chlorine when stored in open tanks as is often the case in paper mills, and I have performed a number of experiments with the object of ascertaining this loss. Samples were taken from a store (the surface area to bulk having been ascertained), and titrated periodically. A solution was exposed in the same way, and weighed periodically.

The solution taken contained 1.85% available chlorine, which is 5.55% bleaching powder. It stood at 7° Tw. On the first, second, and third days the solution was found on titration to contain 1.85% chlorine. On the 43rd day it contained 2.50% of chlorine, and on the 72nd day the solution contained 0.202% chlorine. During the 43 days the solution had increased 35.1% on the chlorine it originally contained, and during the 72 days the solution had decreased by 89.2% of the chlorine it originally contained.

As to the evaporation. During 40 days a similar solution was taken had lost weight equal to 15.88%, or at the rate of 0.397% per diem. During 53 days the solution had lost weight equal to 29.00%, or at the rate of 0.547% per diem. For about 50 days the solution underwent very little change in colour, and it appears that up to a certain stage the loss by weight is almost entirely due to the evaporation of water, which considerably increases the percentage strength of available chlorine. That little or no chlorine is given off is due from the fact that the loss by weight in 43 days is hardly sufficient to account for the increase in the available chlorine found in the solution. After a certain period, which appears to depend somewhat upon temperature, the solution undergoes a more rapid change in colour, becoming much paler, with a corresponding diminution in the percentage. The more rapid evaporation during the later period is probably due to the evolution of chlorine or hypochlorous acid, more probably the former. There appears to be no harm in storing bleach in tanks for six weeks, except in very hot weather, the chlorine being almost inappreciable. Beyond this time a rapid deterioration sets in. There is every reason to believe that there is no danger in half-emptying a store tank or drawing from a tank a large bulk of which is allowed to remain at the bottom for a long time undisturbed. The undisturbed portion, if allowed to remain long, may deteriorate and induce rapid deterioration of fresh portions run into the tank.

Paper makers, and other large consumers of bleach, who have their bleaching liquor pumped up to a head and distributed by gravity through mains to the various parts of their works, should look to the matter very carefully.

ROSE-LAKE FOR SURFACE COLOURED PAPER

The colours used in the manufacture of these papers are derived from the aniline dyes, and in consequence are not fast to either light or atmospheric influences. For preparing red colours will resist the action of light, those obtained from anthracene alizarine, are especially suitable. The anthracenes yield the most coloured lakes with alumina, as is well known in the textile industry, and can be applied with equal success in the manufacture of lithographic inks.

In the Austrian and German works making surface coloured paper the coloured lake is usually prepared on the premises, the following recipe representing the usual practice for preparing an alizarine lake fast towards sunlight. Azarine S is the most suitable for producing a rose-lake.

The following ingredients are mixed together in the vessel in which the lake is prepared, viz.:—5 parts of a solution of phosphate of soda (1 part salt in 20 of water); 2 parts of a solution of carbonate of soda (1 in 10); and 1 part of Turkey-red oil (1 oil to 10 water); to which 50 parts of water. After these are well mixed together, a 10% solution of stannate of soda is added. The stannate is prepared in a separate vessel by mixing five parts of the dye with water, and adding thereto 1½ parts of a 5 per cent. solution of potash or ammonia alum, which must be free from iron. This mixture is then gradually poured into the vessel containing the phosphate of soda, soda, turkey-red oil, and stannate of soda with stirring. The alum acting upon the carbonate of soda causes effervescence, and, therefore, the vessel in which the precipitation of the lake takes place should be of large capacity. When the effervescence has subsided, the mixture is gently boiled for three hours. The coloured lake is then poured upon a filter and washed, first with a solution of carbonate of soda containing two per cent. of the alkali, then finally with cold water. The washing with the soda solution is necessary to get rid of the turkey-red oil, the presence of which in the lake would interfere with its working properties.

ured lake prepared as above is mixed with "blanc fixe" ion of glue before use. In this form it is carefully distributed the surface of the paper in the usual way with brushes by signed machinery. Its covering properties and shade on the mode of preparing it, and if ordinary care be exercised fills all the requirements of the paper-maker in producing ured papers. The rose-colour can be altered in shade by re of other colours.

Correspondence.

not hold ourselves responsible for the opinions expressed by our correspondents.

FORMALIN.

(To the Editor of the Chemical Trade Journal.)

ur attention has been drawn to some correspondence in your specting Formalin, which is the saturated watery solution of hyde, patented and manufactured by Messrs. Schering, of

pany has the sale of this new antiseptic preservative and gent, which gradually finds employment in various ways in r. Should your correspondent, "Methyl," desire to have imation and apply to us, we shall be most happy to comith him.

Yours, etc.,

SCHERING'S. FORMALIN HYGIENIC CO.

April 13th, 1895.

RECENT CUSTOMS DECISIONS.

COTTONSEED MEAL.

is an appeal by J. A. Wright against the action of the Col- of Customs at Eagle Pass, as to the rate and amount of uly collectible on certain cottonseed meal imported into the v. 16, 1894. According to General Appraiser Somerville:— de in question consists of what is commonly and commer- n as cottonseed meal, which is produced by the grinding or n of what is known as "oil cake." The merchandise was ider section 3, Act of August 28th, 1894, and was assessed an unenumerated manufactured article. It is claimed to be as "oil cake," under paragraph 567 of said Act.

as a matter of fact that the article is not merely crushed, but r pulverised by machinery, so as to change its commercial ses from what was known as "oil cake" to a new and dis- known as cottonseed meal. In *Schriefer v. S. Wood*, it was while "charcoal" was free of duty under the Tariff Act then ound or pulverised animal charcoal, known as bone black, empt. The rule was declared to be that when an article distinct name in the trade and commerce of the country is y machinery or by a chemical process, from any material or aving a distinct commercial name from the article pro- may generally speak of the operation by which it is produced icture." A common illustration is meal produced by grind- d flour by grinding wheat. In *re Oliver*. The process of commonly recognised throughout our tariff legislation as a manufacture.

rdingly hold that the said cottonseed meal is not "oil cake," manufacture of oil cake," and overrule the protest claimed paragraph 567, and affirm the Collector's decision.

HYDRATE OF ALUMINA.

is an appeal by Thomas Irwin Sons against the decision ted States Circuit Court of Appeals, and involved the ques- the fine powder known as "hydrate of alumina," manu- m the crude mineral known as bauxite, should be classified purposes under the free list of the Tariff Act of 1890, as or as "alumina" under paragraph 9 of the same Act, and 18ths of one cent per pound.

ion of Judge Cox states clearly the various reasons which a to affirm the decision of the Collector, and to hold that was not bauxite, but was dutiable under the name of

rt of Appeals fully concurred in those reasons, stating while technically speaking, is "hydrate of alumina," it sufficiently in the testimony taken for use before the Circuit Court that speech the terms "hydrate of alumina" and "alumina" synonymous. sion of the Circuit Court was affirmed.

INDIAN CAOUTCHOUC.

ONE of the lesser staples of Indian exports, the trade in which suffers to a regrettable extent from inferiority of quality, due for the most part to preventible carelessness in collection and preparation for the market, is india-rubber from the *Ficus elastica*. This useful substance is the subject of one of the "Hand-books of Commercial Products," published chiefly with the object of drawing attention to the mercantile importance of the rubber tracts of Burmah and Assam. From the facts and information collected it seems fairly reasonable to conclude that if it were found practicable to induce or enforce—according to circumstances—a wider adoption of improved methods, more care and attention in the extraction of the caoutchouc, and less wanton destructiveness in the tapping of trees, the industry might be made much more profitable to those connected with it, and the value of the trade to the country considerably enhanced.

The quality of Indian caoutchouc, it is believed, is not intrinsically inferior to that of other countries, the relatively low price it fetches being attributed simply to the impure state in which it is placed on the market, the extraneous matter consisting of bark, wood, stones, sand, and dirt. At least such was the expression of opinion embodied in the annual report by the Collector of Sea Customs, Calcutta, while commenting on the decline in the export of india-rubber from Bengal in 1887-88. But although the foreign trade from that Presidency in the succeeding five years fell further by as much as 33 per cent. in value, shipments from Burmah, on the other hand, more than proportionately increased, viz., by 57 per cent. Up to the 31st October of last year the total exports of British India show a slight excess quantitatively over those in the corresponding period of the two preceding years, although values are recorded as a shade lower.

Trade Notes.

THE CHEMNITZ DYEING COMPANY.—The Chemnitz Dyeing Company has declared a dividend of 1 per cent. for last year. The outlook for the present year is said to have improved.

THE ARCHIMEDEAN COMPANY.—We are informed that this company has been appointed sole agents for "Ferrolite," a liquid rust-preventing compound, in Coventry and district. The company will be pleased to supply all particulars on application to the offices, 6, Stanley-road, Coventry.

DUTCH MADDER.—Messrs. Bunge and Company, of Rotterdam, report that the market is much the same as last month, there being no change in prices. Stocks of bright madder are very limited. Fine crop is quoted at 32s. to 36s.; small, 28s. to 31s.; regrounds, 13s. to 16s.; and mulls, 5s. to 8s.

GOLD PRODUCTION IN THE RAND.—The total amount of gold produced in this mining district for the month of March is the largest that has ever been known, being 184,945 ozs., and thus exceeding the production in February by 15,650 ozs. As compared with the production in March, 1894, there is an increase of 19,573 ozs.

CLOSING A WORKS.—An official intimation has been received at Runcorn that the directors of the United Alkali Company have decided to close the Wiggs works within a few days. It is generally feared that a like result will soon follow respecting the other works of the company on the Cheshire side of the Mersey. The news has created considerable sensation in the town, for the depressed state of trade has already caused much suffering.

TERRIBLE DEATH OF A CHEMIST.—On Saturday last, at the Ring-o'-Bells, Overton, Frodsham, Mr. Churton investigated the circumstances connected with the death of M. Joseph René Phulpin, aged 31 years, chemist, of Rock Cottage, Frodsham.—A witness named Edward Owen, an employé at the Australian Alum Works, Runcorn, deposed that at 11-45 on Thursday morning, the 11th inst., he and M. Phulpin were draining off a vat of sulphate of alumina, the temperature of which was 185°F. The vat was over four feet deep. M. Phulpin, wishing to bend a pipe, used a stick which was scarcely fit to tear a kettle. Witness was descending some steps to fetch an iron bar when he heard a splash. He ran back and found that the manager had been precipitated into the hot liquor through the breaking of the stick. He was promptly extricated, but his injuries were fearful, and he expired at three o'clock on Friday morning, which was his birthday. Witness stated that the drawing of the vat was not the duty of the manager, and he would not have used a stick for such a purpose.—The Coroner considered that to try to raise a heavy weight with a stick was most imprudent.—Mr. Linaker, solicitor, representing the bereaved family, said the deceased had admitted that he alone was to blame for the accident.—Verdict, "Accidental death."

A CHEMIST'S ACTION AGAINST A COMPANY.—On Monday a somewhat curious and instructive action was heard in the Liverpool Police-court (before Mr. Kinghorn), in which Dr. S. Kleeman brought certain summonses against Messrs. Goodlass, Wall, and Company, Limited, paint and varnish manufacturers, with whom he had been engaged as chemist. Previous to the action there appears to have been friction between the parties over certain patents.—In opening the case, Mr. Quilliam stated that he appeared on behalf of Dr. Samuel Kleeman, of Stoneycroft, who was a shareholder in the defendant company, and held 100 preferential shares of the value of £10. each in the same, the total amount his client had invested in the company being £1,000. On the 3rd instant Dr. Kleeman wrote to Mr. Wall, the managing director, asking for a copy of the balance-sheet and of the list of registered shareholders, and on the following day Mr. Wall replied by letter declining to give him the information required. With reference to the balance-sheet no doubt Mr. Wall was within his rights in refusing to furnish a copy of the same, as under a section of the articles of association of the company there was a provision that the balance-sheet had not been circulated, and no copy of, or extract from, the same should be taken or made except at the discretion of the managing director, and therefore if Mr. Wall in his discretion deemed it politic to refuse to give a copy of the balance-sheet he was within his rights; but the other portion of the demand he had no business to refuse, as section 32 of the Companies Act provided that copies of the register were to be furnished to any member demanding the same, on payment of 6d. for every hundred words. Having received this letter, Dr. Kleeman went with another gentleman to the registered offices of the defendant company. They met Mr. Wall just outside the office, and Dr. Kleeman said to him, "I have come to ask you again to let me see the members' open register book and to furnish me with a copy of the list of shareholders." Mr. Wall replied, "You will get it from London by payment of 1s." Thereupon Dr. Kleeman put his hand in his pocket and, taking a shilling out, said, "I am quite willing to pay you the shilling now if you will give me the copy." Mr. Wall said, "You will not get any assistance from me," and walked away.—After a lengthy legal argument, Mr. Kinghorn said he had decided to dismiss the two summonses against Wall and Bentley, but that he would fine the company 5s. and costs, and would allow one guinea as special solicitor's costs against the company.

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzols are flat at 1s. 1d. for 90's and 1s. 0½d. for 50/90's. Carbofic acid keeps firm, 60% crude remaining steady at 1s. 6½d., while 40% crystals are strong at 6d. There is virtually no change in naphthas, the quotations for both crude and solvent being unaltered from last week. Anthracene is quiet at 1s. 1d. for 30% A and 9½d. to 10d. for B. Pitch keeps firm at 34s., f.o.b. East Coast.

Sulphate of ammonia is unaltered. "Bears" are taking orders at low rates, and some holders appear to have had their confidence shaken in consequence. In Scotland under £10. has been reported as having been accepted. Bear operators do not hesitate to magnify stocks as much as possible. The nearest quotations possible under the circumstances are:—Leith £10., other ports £10. to £10. 2s. 6d.

REPORT ON MANURE MATERIAL.

During the week business has been of a rather holiday character, prices rather favouring buyers. For forward shipment and delivery there is not much disposition to operate, and very little is doing in this position. Quotations for mineral phosphates remain as last reported, but they do not lead to business, buyers in the meantime holding back. There is nothing fresh to report in River Plate bones. The value of anything afloat is about £4. 2s. 6d., delivered good to United Kingdom ports, but for autumn shipment more money would have to be paid. Crushed Kurrachee bones offer for autumn shipment at £4. 7s. 6d. to £4. 10s. per ton, according to grist, and it is said that fully equal to these prices is being paid for the Continent. Bombay bone meal continues to be scarce on spot, and £4. 12s. 6d. to £4. 15s. per ton is required. For off-season shipment £4. 5s. per ton would be accepted, but this price would hardly do for late autumn. Exchange is against low prices, and shippers are shy of rushing it far ahead. Common grinding bones, being in small supply, find a ready sale at £4. to £4. 3s. 9d., according to quality and condition. Nitrate of soda is easy in all positions. On spot, fine quality may be had at 8s. 6d. per cwt., and good ordinary at 8s. 4½d. per cwt. Due and arrived at ports of call cargoes are not worth over 8s. to 8s. 3d. per cwt.

MISCELLANEOUS CHEMICAL MARKET.

In the alkali trade there is a fair amount of business being done in the staple products, but values show no sign of improvement in direction. Ammonia alkali, 58%, continues to be offered at £3. 5s., in bags, f.o.b. Soda crystals £2. 10s. to £2. 2s. 6d., Bleaching powder fairly brisk for export at £7. 5s. hardwoods, but it is also sold at lower prices for certain markets. Caustic soda without any change, spot and forward quotations being as follows: F.o.b. Liverpool, 77%, £9. 7s. 6d.; 74%, £8. 7s. 6d.; 70%, £7. 60%, £6. 10s. nett per ton, 10-ton lots and upwards. Sulphur grades is slow of sale, and extremely low prices are ruling. New soda offering at 8s. 4½d. to 8s. 6d., spot and near delivery. Chloride of potash 4½d., and chlorate of soda 6½d. per lb. Sulphate of soda continues a fairly active market at £15. 5s., f.o.b., according to brand. Acetates of lime, acetic acid, and all in this line of products are still depressed. Potash, caustic and carbonate, is scarce—little stock being available on the spot, and prices are firm. Potash a weaker market at 8½d. to 8¾d. per lb. Cyanide also lower at 1s. 6d. to 1s. 7d. Sulphocyanides slightly easier only in small demand. White powdered arsenic very scarce, and firm at £14. 15s. Carbolic crystals have improved in value, and firm at 6d. for 39/40%. Aniline oil and salt are nominally unchanged but demand is light. Lead acetate, nitrate, and other salts generally weak. The general demand for all chemicals is still satisfactory.

LIVERPOOL OIL AND COLOUR MARKET.

OILS.—Palm oil is steady, with a rather quiet demand: 18 of Lagos have been done at £20. 15s. per ton. Olive keeps at £30. to £38. per tun, according to quality. There is a meagre inquiry, but owing to the advance in mineral oils the market is promising. Linseed is firm at 20s. 6d. to 21s. 6d. per cwt. for Lin makes in export casks. Cottonseed is dearer, with a rather demand at 18s. to 18s. 6d. per cwt. Castor oil is steady: seconds Calcutta are firm at 2½d., but first pressure French offered at 2½d. per lb. Resin is rather quiet at the usual price have been ruling lately. Tallow is firm, but so far has recovered from the holiday quietness. Spirits of turpentine as well inquired for at 23s. per cwt. Petroleum has advanced during the past week, prices having been put up as much as 3d. per gallon. With a rising market, quotations are useless just now.

COLOURS are steady, without alteration in Ochres: Oxfordshire, common, £10.; medium, £12.; best, Derbyshire, common, 40s.; medium, 50s.; best, 60s.; Welsh 90s., seconds, 50s., and common, 18s.; Irish, Devonshire, 45s.; French, J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Turkish quiet; Devonshire, 50s. to 55s. White lead, £16. unchanged. Venetian red, £6. to £10. Cohalt: Prepared 9s. 9d.; black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; 2s. 6d. Oxide of iron: Common, £7.; medium, £10.; finest Zinc oxide, £22. 10s. to £25.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron, easy: Scotch warrants at 42s. 3½d., Middlesbrough 34s. 5½d. cash, and hematite 42 Copper, firm: Chili bars, G. O. B.'s and G. M. B.'s, at £40. 7s. 6d. to £40. 12s. 6d. cash, and £40. 15s. to three months. Tin, dearer: Straits closed at £64. 10s. cash, and £65. to £65. 10s. three months; Australian, £6 Lead, steady: Spanish, £10. 1s. 3d.; English, £10. 5s. spelter: ordinary, £14. 2s. 6d. Nickel, 1s. 2½d. and £31. Quicksilver: first hands, £6. 15s.; second hands, £4 Copper shares, firmer: Cape, 1½ to 1¼; Copiapó, 1½ to Libiola, 3¼ to 3½; Mason and Barry, 2¼ to 2½; Rio Tinto to 14¼; Tharsis, 4¼ to 4½.

GLASGOW, WEDNESDAY.—Market steady, with moderate business. Scotch done at 42s. 3½d. and 42s. 4d. cash, also at 42s. 18 month, closing with buyers at 42s. 3½d. cash, sellers ask 42 Cleveland closes with buyers at 34s. 5½d. cash; sellers ask 34 Cumberland hematite closes with buyers at 42s. 10d. cash, 42s. 11d. Middlesbrough hematite closes with buyers at 41 cash, sellers ask 41s. 7½d.

LIVERPOOL MINERAL MARKET.

Business in general is quiet this week, owing to the holiday last week's prices are ruling. Manganese: There are no reports, and on the other hand sales are few. Ground manganese

in steady request at £6., £8., £10., and £12. 10s. per ton, according to quality. Manganiferous iron ore is unaltered at 15s. per ton for Grecian and 16s. to 17s. 6d. per ton for Spanish cargoes. Bauxite: Very extensive inquiries are now in for Irish Hill brand in particular, arising chiefly from the use of aluminium metal therefrom; prices are, consequently, the probability of an advance, at 20s. per ton for first quality, 15s. per ton for second quality, and 12s. per ton for third quality. Chrome ore still continues in good demand, and prices maintained at 70s. per ton for 40% and 110s. to 115s. per ton for 50%. French chalk: Arrivals are few, and prices are still firm at 90s., and 110s. per ton for "Angel White" and "Gold Alkalies." Tungsten metal still continues steady at unaltered prices. Umbago sells freely, the demand for foundry and lubricating being well maintained at £5., £6., and £10. per ton, according to quality. Arsenic is still scarce. Barytes: Carbonate is 60s. to 90s. per ton for fair to good quality; sulphate, 100s. per ton; ground from 45s. to 70s. per ton. China clay: fair inquiry for this at 22s. 6d., 30s., and 35s. per ton for different qualities. Bog ore continues in steady demand at about 22s. 6d. Fluorspar: lump and ground is in fair demand at 40s., 120s. per ton, according to quality. Feldspar is steady at 100s. per ton. Cryolite still remains unaltered at £40. Oxide of iron is steady at from 10s. 6d. to 11s. per lb.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, WEDNESDAY.

Various managers of the Scottish oil and paraffin industries had met last week, and found themselves quite unexpectedly the staple article of burning oil. The rise in the foreign oils, in unostentatious in January last, and was not greatly noticed, has within the past fortnight attained to phenomenal proportions. regard is had to the terribly rundown values of the past eight years. American oil through thinning of stocks has about the market quotation since the close of last year, and the selling without hesitation, and merely as a first move, put up oil one penny per gallon, and decided that in view of the present condition of the market there was to be no forward dealing in the meantime. This brought the price up to 5½d., but is now firmer even than that, and has mounted another during the week. This market movement, if sustained, a bit of real good fortune to the industry, and very different to the usual paraffin agreement. The Stock Exchanges are active in the "oil" section, and shares have gone up by leaps and bounds. Sulphate still descends, and some makers are taking £10. a ton, possibly less.

Chemicals are quiet as a rule, and prices not improved, but some activity in the shipping section.

Prices current are:—Soda crystals, 35s. nett, Tyne; 48/52°, £3. 12s. 6d. to £4. 5s. nett, Tyne; white alkali, 10s. to £5. 5s. nett, Tyne; alum in lump, £5. 10s. nett, caustic soda, white, 74° £9., 70/72° £7. 15s., 60/62° and cream 60/62° £6. 10s., all nett, Liverpool; bleaching 76. 10s. to £7., nett, Tyne; saltcake, 17s. 6d.; borax, English 20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; soda of potash, 4½d. nett, for Scotch and English deliveries (for 100 d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for English deliveries (for export, 3½d. nett, f.o.b. Glasgow); soda of potash, 4¼d. less 5%, Liverpool; nitrate of soda, 8s. 9d.; sulphate of ammonia, £10. to £10. 2s. 6d. prompt f.o.b. ammoniac, first and second white, £39. and £37. nett, any port, copper, £15. 5s. less 5%, Liverpool; paraffin scale, hard and soft, 1½d. to 2½d. per lb.; paraffin wax 120° semi-refined, 2½d.; paraffin spirit (naphtha), 5½d. to 6d. per gallon; kerosene (burning), 5½d. to 6½d. at works, for Scotch buyers (English to ¾d. lower); ditto (lubricating) 865° £4. 5s.; 885° £4. 10s. and 890/895° £5. to £5. 10s. Week's imports of sugar at Tyne were 11,000 bags beet unrefined.

TYNE CHEMICAL REPORT.

TUESDAY.

Markets quiet, and at the moment very little enquiry. Business will probably prove after the holidays. Shipments continue fairly good. Prices are as under:—

Soft powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, nett; soda, 76/77°, £9. 10s. per ton, nett; do., 70°, £7. 15s. per ton, nett; recovered sulphur, 2 cwt. bags, £4. 5s. per ton, nett; do., 48%, £3. 15s. per ton, nett; do., 52%, £4. 2s. 6d.

per ton, nett; do., 56%, £4. 10s. per ton, nett; alkali, 36%, £2. 15s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. 15s. per ton, nett; do., 52%, £5. 5s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. per ton, nett; do., 1 cwt. kegs, £6. 12s. 6d. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £1. 16s. 6d. per ton, nett, gross weight; do., 2 cwt. bags, £1. 16s. 6d. per ton, nett; chlorate of potash, 5¼d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £4. 2s. 6d. per ton, nett; blanc fixe, £7. 10s. per ton, nett; chloride of barium, £7. 10s. per ton, nett; carbonate of alumina, £28. 15s. per ton, nett; aluminate of soda, £33. 15s. per ton, nett; in 5 ton lots, £28. 10s. per ton, nett.

SALT steady at 9s. to 9s. 6d. per ton, f.o.b. Tees.

COALS.—Very little new business doing owing to holidays. Quotations nominally. Best Northumbrian steam, 8s. 9d. to 9s. per ton; second qualities do., 7s. 9d. to 8s. per ton; small steam, 4s. to 4s. 3d. per ton; gas coals dull, 6s. 9d. to 7s. per ton; bunker coals, 6s. 6d. to 7s. per ton; household coals, 10s. 6d. to 11s. per ton. Coke, steady, 12s. to 14s. per ton.

New Companies.

British Sanitary Soap Co., Ltd.—CAPITAL £2,000., in shares of £1. each. This company has been formed to manufacture soap for domestic and sanitary uses, disinfectants, chemicals, etc.

Davies & Evans, Ltd.—CAPITAL £100,000., in shares of £1. each. This company has been formed to take over and carry on a number (about 20) of oil, colour, drysaltery, and other shops. The subscribers to the memorandum of association are:—E. H. Jupp, 7, St. Mildred's Court, E.C., solicitor; R. W. Regge, 7, St. Mildred's Court, E.C., solicitor; F. Copland, 55, Foxberry-road, Brockley, accountant; R. N. Sherwood, Kennington Park, S.E., clerk; S. B. Gow, 26, Boundary-lane, S.E., clerk; C. G. W. Wingate, 40, Iverson-road, N.W., clerk; W. Evans, 11, Tollington Place, N., clerk.

Pure Carbon Co., Ltd.—CAPITAL £12,000., in shares of £1. each. This company has been formed to acquire certain patent rights and to work the same in connection with the preparation of pure carbon. The subscribers to the memorandum of association are:—A. T. Hooper, Bexley, Kent, merchant; F. G. Painter, 19, Coleman-street, E.C., chartered accountant; H. T. Adkins, 6, Brighton-terrace, Surbiton, S.W., secretary; P. Holme, 26, South Eaton Place, W., secretary; A. E. Watts, 44, Ashbourne Grove, East Dulwich, clerk; F. R. Edward, Lansdowne-road, Tottenham, clerk; K. G. Hooper, 19, Gerrard-street, Islington, N., clerk.

General Gold Extracting Co., Ltd.—CAPITAL £100,000., in 100,000 shares of £1. each (70,000 preference). This company has been formed to acquire work, and generally turn to account all the patents, patent rights, etc., obtained, or to be obtained, for the Pelatan Clerici process and apparatus for the extraction of gold and silver from their ores, and to carry on business as miners and smelters, refiners, metallurgists, etc. The subscribers to the memorandum of association are:—J. R. Rhodes, 8, Cloudeley-square, N.; G. C. Lindsay, 3, Cursthorpe-street, W.C.; L. Longinotto, Wickham-road, Brockley; P. A. Hutton, 5, Sigdon-road, Dalston-lane, N.E.; W. A. Howell, University of London, W.; N. G. Newington, 76, Ondine-road, East Dulwich; A. Benwell, 10, Machell-road, Nunhead.

The Patent List.

This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

Mixing Precipitants with Sewage. J. Berry. 6,632. April 1.
Showing Scales on Thermometers. E. M. V. Gibb and G. W. Simpson. 6,653. April 1.
Improvements in Tanning Hides. F. Prelli and B. Demo. 6,692. April 1.
Purifying Acetates. A. R. Scott and T. R. Henderson. 6,711. April 2.
Soap. W. Ford and C. P. Maher. 6,717. April 2.
Producing Nitric Acid and Nitrates of Soda, Potash, and Lime. F. Hamer and A. G. Marshall. 6,725. April 2.
Mineral Grinding Mills, especially suited to Cement. W. Garner and E. A. Glover. 6,768. April 2.
Acetylene Generating and Storing Apparatus. E. Gearing. 6,777. April 2.
Extracting Gold and Silver. J. S. MacArthur and J. Yates. 6,802. April 2.
Improvements in Manufacture of Steel. T. Hampton. 6,844. April 2.
Apparatus for Dehydrating Gypsum, etc. H. Kropff. 6,868. April 2.
Manufacture of Ammonium Nitrate. F. W. Passmore. 6,905. April 4.

Extracting Colouring Matters from Dyewoods. F. E. Mafat 6,967.
 April 4.
 Leasing Air-filtering Screens. F. Ashwell and D. M. Nesbit. 6,978.
 April 4.
 Improvements in Esparto Boiling. J. P. Cornett. 6,999. April 5.
 Rendering Textile Fabrics unflammable. R. J. Crowley and J. Chisholm.
 7,044. April 5.
 Male Distilling Retorts. J. Bryson, J. Jones, and W. Fraser. 7,113.
 April 5.
 Producing Disinfectants from Sea Water by Electrolysis. H. Nolan.
 7,119. April 5.

Gazette Notices.

BANKRUPTCY ACTS, 1883 and 1890.

Adjudications.

DESLANDES, EDWARD, Birmingham and Harborne, oil merchant.
 ROBINS, EVAN, Dowlais, oil seller.
 GRAY, BENNETT, Waltham, Lincolnshire, late tanner and feldmenger, now occupation.

IMPORTS OF CHEMICAL PRODUCTS

AT

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.					
Week ending April 6th.					
Acetanilide—		Belgium, 11	O. Scholzig	" 136	Stansbury & Co.
Holland, 5 pkgs.	F. Boehm	Holland, 15	Hernu, Peron & Co.	" 6	J. Forsey
Acetic Acid—		S. Russia, 12	A. Levermore & Co.	" 37	F. W. Heilgers & Co.
Belgium, 7 pkgs.	C. J. Capes	Belgium, 15	T. Palmer	" 4	Phillips & Graves
& Co.		Holland, 1	L. G. & D. Rly.	" 56	Wrightson & Sons
Holland, 100	A. & M. Zimmermann	" 41	J. Barber & Co.	" 30	Parry & Co.
Alkali—		China Clay—		" 21	Croysdale & Co.
Holland, 40 c.	W. Beard & Son	Belgium, 225	Henderson, Craig & Co.	" 15	Blythe, Green & Co.
Alum—		Chrome Ore—		" 78	Park, Macfadyen & Co.
Holland, 4 pkgs.	W. Burton & Sons	Sydney, 117 t.	G. G. Blackwell, Sons & Co.	Nicaragua, 19	Lewis & Peat
Alumina—		" 803	A. Gibbs & Sons	" 77	L. & I. D. Jt. Co.
Holland, 65 pkgs.	R. W. Greeff & Co.	Cream of Tartar—		Logwood	
Ammonium Chloride—		Italy, 17 pkgs.	Howards & Sons	Jamaica, 55 t.	Benekendorff & Co.
Holland, 13 pkgs.	H. Lorenz	Holland, 20	Kirkpatrick & Co.	" 60	Hawthorn, Sheddon & Co.
Antimony Ore—		France, 8	W. C. Bacon & Co.	" 71	Park, Macfadyen & Co.
Oporto, 50 t.	J. Bamber	" 2	G. S. N. Co.	A. Turkey, 23	Union L. Co.
Asbestos—		" 6	B. & F. W. Co.	Myrabolams	
Germany, 416	Craven & Co.	" 5	London & W. Eng.	E. Indies, 670 pkgs.	L. & I. D. Jt. Co.
Barium Oxide—		Italy, 21	Yeast Co.	" 215	Forbes, Forbes & Co.
Germany, 8 pkgs.	Craven & Co.	Dextrine—	Union L. Co.	Shumac	
Barium Peroxide—		Germany, 100 pkgs.	H. Lorenz	Italy, 1,000 pkgs.	J. Kitchin, Ltd.
Havana, 8 pkgs.	Beresford & Co.	Dyestuffs—		Tanner's Bark	
Barytes—		Aniline		Belgium, 11 t.	Leach & Co.
Holland, 76 cks.	D. Storer & Sons	Holland, 3 pkgs.	L. C. & D. Railway	Germany, 108	Devitt & Hett
" 25	Colthurst & Harding	Annatto		" 36	Perkins & Homer
Germany, 19	S. H. Willoughby	Holland, 8 pkgs.	J. Barber & Co.	Natal, 52	Boutcher, Mortimore & Co.
Holland, 92	Burrell & Co.	" 8	R. J. Fullwood & Bland	" 30	A. & W. Nesbitt
Belgium, 134	J. L. Lyon & Co.	Ceylon, 24	H. A. Litchfield & Co.	" 18	Dyster, Nalder & Co.
Holland, 24	Union Lighterage Co., Ltd.	Argols		Turneric	
Amphor—		Italy, 1,238 pkgs.	B. Jacob & Sons	E. Indies, 320 pkgs.	Arbuthnot, Ewart & Co.
Germany, 6 pkgs.	L. & I. D. Jt. Co.	" 138	Thames S. T. & L. Co.	" 125	L. & I. D. Jt. Co.
Antouchou—		Cochineal		" 500	Wrightson & Son
Madagascar, 42 c.	L. & I. D. Jt. Co.	Canaries, 6 pkgs.	G. S. Bruce Knowles & Foster	" 187	Butler's Wf., Ltd.
Uruguay, 44	Prop. Bull Wf.	" 5	F. Huth & Co.	" 180	W. H. Sampson
U. States, 19	"	" 18	W. M. Smith & Sons	Farina—	
Germany, 14	G. H. Penney & Co.	" 10	"	Holland, 100 pkgs.	R. G. Hall & Co.
" 55	Wallace Bros.	Cutch		" 100	Beck & Pollitzer
" 18	Clarke & Smith	Rangoon, 1,000 pkgs.	W. H. Cole & Co.	Glucose—	
" 60	Anderson, Weber & Smith	" 400	A. Howden & Co.	Belgium, 400 pkgs.	450 c. L. Norman & Co., Ltd.
" 79	Procter Bros.	" 500	Hoare, Wilson & Co.	France, 200	200 c. Perkins & Homer
Rangoon, 443	L. & I. D. Jt. Co.	" 350	Leach & Co.	U. States, 250	500 L. & N. W. Ry.
E. Indies, 50	"	" 200	Arracan Co., Ltd.	" 500	500 Beck & Pollitzer
Cape, 90	E. Boustead & Co.	" 100	G. S. N. Co.	" 4,773	5,495 L. Sutro & Co.
Zanzibar, 13	Hammond & Co.	Divi Divi		" 500	500 G. Hedges & Son
" 200	Forbes, Forbes & Co.	E. Indies, 197 pkgs.	Culverwell, Brooks & Co.	" 250	250 Oblenschlager Bros.
" 9	W. M. Smith & Sons	" 121	Brown & Elmslie	" 250	250 Thames S. T. & L. Co., Ltd.
" 6	L. & I. D. Jt. Co.	Extracts		" 1,400	1,400 J. Barber & Co.
Rangoon, 114	Arbuthnot, Ewart & Co.	Jamaica, 150 pkgs.	E. Schweich	" 215	513 R. G. Hall & Co.
U. States, 1	Middleton S. S. S.	Belgium, 30	Leach & Co.	" 50	281 J. Keiller & Son, Ltd.
" 20	Wf. Co. Mory & Co.	France, 25	B. & F. W. Co.	" 340	340 Williams, Torrey & Co.
Castor Oil—		Austria, 200	Boutcher, Mortimore & Co.	" 50	300 Deering & Robottom
Egypt, 3 bris. Ross & Deering		Denmark, 15	Sorensen & Co.	" 50	300 Union L. Co., Ltd.
E. Indies, 10 cks.	Co-op. Lighterage Assn., Ltd.	France, 130	L. J. Levinstein & Sons	Guano—	
Belgium, 113 bris.	Fuerst Bros.	Puritic		N. Zealand, 7 t.	F. C. Devon & Co.
Caustic Potash—		Jamaica, 7 t.	Park, Macfadyen & Co.	Lead Acetate—	
Belgium, 22 c.	Petri Bros.	" 19	Benekendorff & Co.	Holland, 9 pkgs.	Beresford & Co.
France, 50	"	Gambier		Magnesia—	
Germany, 12 pkgs.	Beresford & Co.	E. Indies, 336 pkgs.	L. & I. D. Jt. Co.	Holland, 60 pkgs.	Beresford & Co.
" 100	T. H. Lee	" 240	J. Greig	Manganese Ore—	
" 5	Phillips & Graves	Indigo		Adelaide, 150 t.	Harrold Bros.
" 35	A. & M. Zimmermann	E. Indies, 9 cks.	F. Claydon & Co.	Manure—	
" 3	Pickford & Co.	" 7	Williams, Torrey & Co.	Belgium, 14 t.	H. & F. Albert
" 1	Leo L. & I. D. Jt. Co.	" 185	J. Owen	E. Indies, 260	A. Hunter & Co.
" 3	Jensen & Nicholson	" 24	F. Huth & Co.	Germany, 50	F. W. Berk & Co., Ltd.
		" 62	Elkan & Co.	Sydney, 70	A. Hunter & Co.
		" 44	P. & O. Co.	" 100	Pickford & Winkfield
		" 54	L. & I. D. Jt. Co.	Germany, 20	F. W. Berk & Co., Ltd.
		" 60	Ross & Deering	Belgium, 50	Anglo-Contl. G. Wks.
		" 12	Langstaff & Co.	Peru, 300	N. Waterhouse & Sons
		" 65	Parsons & Keith		

N. Zealand, 10	F. C. Devon
Belgium, 2	Coast Light
N. Zealand, 2	Deering & Co.
Methyl Alcohol—	
Germany, 24 cks.	L. & I. D. Jt. Co.
Mica—	
E. Indies, 425	W. M. Smith
Molasses—	
Germany, 260	140 c. Owen
Nitre—	
Chili, 14,437 bgs.	Anglo-C
Ochre—	
France, 80 cks.	W. Taylor
Holland, 197	W. H. Harris
Ozokerit—	
Germany, 124 pkgs.	L. N. G.
Paraffin Wax—	
U. States, 1,300 bris.	Anglo-C
" 1,427	G. H.
" 350	H. Hill
Rangoon, 504 cks.	
Phosphate Rock—	
France, 530 t.	A. Harb
" 145	Miller & Co.
" 200	A.
Belgium, 60	H. & C.
" 210	Laven & Co.
" 250	Mar
Plumbago—	
Belgium, 90 cks.	Brit. Am.
Ceylon, 15	Marshall & Co.
" 185	R. G. H.
Germany, 3	Fellows, Morris
Ceylon, 192 bris.	National
" 206	Co-op. L.
" 323	L. & I. D.
Potassium Carbonate—	
France, 40 c.	L.
Belgium, 100	P.
Potassium Sulphate—	
France, 40 pkgs.	A. J.
Pumice Stone—	
Italy, 15 1/2 t.	O'Han
" 4	Ellis & Co.
" 7 1/2	W. J. Davies
Pyrilites—	
Spain, 1,345 t.	C. L. Vasey
" 1,969	C. T. Tennant
Quicksilver—	
Italy, 300 bris.	L. & I. D.
Rosin—	
U. States, 2,300 bris.	Morse & Co.
Holland, 403	H. Hill
Salicylates—	
Holland, 3 pkgs.	J. B. Smith
Saltpetre—	
E. Indies, 1,225 bgs.	Co-op. L.
" 1,323	Lucas & Sons
Germany, 26 cks.	L. & I. D.
" 42	J. Hill
" 56	F. H. Smith
Sodium Hyposulphite—	
Holland, 51 pkgs.	Benekendorff & Co.
Starch—	
Belgium, 100 pkgs.	Phillips & Co.
" 40	Magn. T. & Co.
" 20	L. & I. D.
" 500	Starr & Sons

422	F. Claydon & Co.		
422	T. H. Lee		
160	H. Johnson & Sons		
50	Page, Son, & Co		
740	Prop. Scott's Wf.		
80	Arnati & Harrison		
400	Seaward Bros.		
22	Phillipps & Graves		
40	J. Barber & Co.		
961	Little & Johnston		
120	T. H. Lee		
ne—			
m, 15 cks.	D. C. Thomas & Sons		
13	63 bgs. H. Hill & Sons		
ay, 3 cs.	W. Balchin		
h, 100 bgs.	Walbaum & Tosetti		
ir —			
200 t.	A. F. White & Co.		
20	R. Morrison & Co.		
15	B. Jacob & Sons		
and Stearine—			
tes, 10 cks.	J. Hales		
4, 17 brls.	W. H. Carey & Sons		
ic Acid—			
d, 16 pks.	B. & F. Wf. Co.		
21	F. C. Devon & Co.		
2	Kirkpatrick & Co.		
20	B. & F. Wf. Co.		
ide—			
d, 100 cks.	J. Matton		
es, 48 687	H. Funck & Co.		
asia, 52 brls.	Atlantic Wf. Storage Co.		
52	Atlantic Wf. Oil Storage Co.		
103	F. & S. Chiesman & Co.		
104	C. B. Leighton		
arine—			
d, 20 cs.	Herru, Peron, & Co.		
3 pks.	15 brls. G. Rabin & Co.		
20 cks	Thames S. T. & L. Co., Ltd.		
ay, 3	C. S. Lovell		
ion—			
3 cs.	Beck & Pollitzer		
3 pks.	L. & I. D. Jt. Co.		
ay, 4	Phillipps & Graves		
Lead—			
d, 30 cks.	Randall Bros.		
m, 18	Colthurst & Harding		
10	J. L. Lyon & Co.		
20	Perkins & Homer		
g—			
tes, 418	Wingate & Johnston		
m Ore—			
land, 4 t.	L. & I. D. Jt. Co.		
Pulp—			
410 bls.	Galbraith, Pembroke, & Co.		
ay, 813	E. J. & W. Goldsmith		
d, 1,500	Little & Johnston		
4, 102	W. Friedlander		
80	Henderson, Craig, & Co.		
381	W. G. Taylor & Co.		
y, 326	90 pks.		
d, 500	E. J. & W. Goldsmith		
1,400			
y, 1,750 pks.	W. E. Bott & Co.		
ide—			
d, 75 brls.	M. Ashby, Ltd.		
53 cks.	J. Matton		
25	T. & W. Farmiloe		

VERPOOL.

Week ending April 4th.

of Lime—			
ork, 2,193 bgs.			
160	Co-op. W'sale Society, Ltd.		
en—			
4 cs.	D. Midgley & Co.		
ium Chloride—			
75 cks.	Cunard S. S. Co., Ltd.		
ony—			
aiso, 1 sk.	Frühling & Goschen		
ony Ore—			
aiso, 386 bgs.	Kleinwort, Sons & Co.		

120	Vivian, Younger & Bond		
298	Hainsworth Watson		
Barytes—			
Rotterdam,	33 cks.		
Antwerp,	100 bgs.		
Bone Ash—			
River Plate,	2,254 bgs.	Balfour Williamson	
Campana,	237		
Bone Meal—			
Bombay,	1,990 bgs.		
Carbon Black—			
New York,	150 brls.	Sternhoff, Sons & Co.	
Castor Oil—			
Marseilles,	5 brls.	Belfast & Mersey S. S. Co.	
"	6	Clay, Dod & Co.	
"	40	J. J. Langley	
"	219	1 ppe.	
Chemicals (otherwise undescribed)			
Bremen,	1 ck. 4 cs.		
Baltimore,	50		
Rotterdam,	1		
Colours—			
Rotterdam,	10 cks.		
Cottonseed Oil—			
New York,	1 776 brls.		
Cream of Tartar—			
Marseilles,	15 brls.		
Barcelona,	10 cks.		
Dried Blood—			
Campana,	200 bgs.		
Dyestuffs—			
Algarrobbilla			
Valparaiso,	800 bgs.	Schientz & Co.	
"	400	F. Treleven	
"	117		
Cochineal			
Gd. Canary,	3 bgs.	Sperling & Williams	
"	15	Canary I. Trading Co.	
Cutch			
Singapore,	850 bxs.	Ocean S. S. Co.	
Boston,	50		
Kangoon,	1,250		
Diyl Diyl			
Hamburg,	61 bgs.		
Extracts			
New York,	15 brls.	W. Bingham	
Bordeaux,	200 cks.		
Fustic			
Baltimore,	3,671 ps.		
Gambier			
Singapore,	484 bls. 1,016 bgs.	R. & J. Henderson	
"	8,242	84	
Madder			
Rotterdam,	1 ck.		
Myrabolams			
Bombay,	600 bgs.	D. Sassoon & Co.	
Sumac			
Palermo,	100 bgs.		
Barcelona,	100		
Yalonia			
Syra,	400 bgs.	A. Vocotopoulos & Sons	
Farina—			
Havre,	1,000 sks.	Cunard S. S. Co., Ltd.	
Gelatine—			
Rouen,	3 bls.	Co-op. W'sale Society, Ltd.	
Glucose—			
New York,	150 brls.		
Glue—			
Marseilles,	200 bls.		
St. Nazaire,	10 20 cs.		
Rotterdam,	300 bgs. 2		
Rouen,	43 cks.	Co-op. W'sale Society, Ltd.	
Hamburg,	58 bgs.		
Boston,	5 brls.	Richards & Ward	
Antwerp,	3 pks.		
Lactic Acid—			
New York,	1 cs.	J. Neilborn	
Lamp Black—			
Gothenburg,	100 cs.		
Ochre—			
Marseilles,	47 brls.		
Paint—			
Boston,	100 cs.	W. Nicol & Co.	

Paraffin Wax—			
Baltimore,	205 brls.		
Phosphate—			
Antwerp,	250 bgs.		
Pitch—			
Marseilles,	25 brls.		
Potash—			
Rouen,	59 cks.	Co-op. W'sale Society, Ltd.	
Rotterdam,	1		
Dunkirk,	2 22 dms.		
Pyrites—			
Huelva,	2,978 t.	Matheson & Co.	
Rosin—			
Boston,	250 brls.		
Saltpetre—			
Hamburg,	1 ck. 165 kgs.		
Soap—			
New York,	100 bxs. 100 cs.	R. Crooks & Co.	
Marseilles,	17		
Rotterdam,	5		
New York,	4		
Soda—			
Antwerp,	40 brls.		
Sodium Silicate—			
Rotterdam,	1 ck.		
Starch—			
New York,	400 bgs.		
Amsterdam,	20 bxs.		
Rotterdam,	10 cs.		
Antwerp,	160	J. T. Fletcher & Co.	
Stearine—			
Antwerp,	10 cks.	J. T. Fletcher & Co.	
"	2		
Tallow—			
New York,	100 tcs.		
Campana,	174 cks.		
Tartar—			
Bordeaux,	21 cks.		
Tartaric Acid—			
Marseilles,	20 brls.		
Bordeaux,	6 cks.		
Treacle—			
St. Nazaire,	1 cs.		
Marseilles,	1	Hawkes, Somerville & Co.	
Ultramarine—			
Bremen,	20 cks.		
White Lead—			
Rotterdam,	222 cks.		
Dunkirk,	14 dms.		
Antwerp,	16 cs.		
Wood Pulp—			
Gothenburg,	170 bls.		
Zinc Ashes—			
Rouen,	15 cks.	Co-op. W'sale Society, Ltd.	
Zinc Oxide—			
Rotterdam,	76 cks.		
Zinc White—			
Rotterdam,	145 cks.		

MANCHESTER.

Week ending April 6th.

Albumen—			
Hamburg,	8 cs.		
Alumina Sulphate—			
Rotterdam,	77 cks.		
Antimony Oxalate—			
Rotterdam,	4 cks.		
Arachide Oil—			
Rotterdam,	10 cks.		
Barium Chloride—			
Hamburg,	12 cks.		
Barytes—			
Antwerp,	50 bgs.		
Chemicals (otherwise undescribed)			
Hamburg,	5 cks.		
Rouen,	20		
Chrome Alum—			
Rotterdam,	30 cks.		
Colours—			
Hamburg,	1 ck. 3 cs.		
Rotterdam,	187 73		
Ghent,	3 21 brls.		
Antwerp,	2		
Dextrine—			
Stettin,	100 bgs.		
Dyestuffs—			
Alizarine			
Rotterdam,	25 cks. 3 cs.		

Extracts			
Treport,	40 cks.		
Farina—			
Hamburg,	560 bgs.		
Stettin,	50		
Glucose—			
Stettin,	8 cks. 50 kgs.		
Glue—			
Hamburg,	80 bgs.		
Rotterdam,	120		
Treport,	44 bls. 2 cks. 4 cs.		
Rouen,	36 5		
Lead Acetate—			
Hamburg,	32 cks.		
Rotterdam,	107		
Limestone—			
Antwerp,	2 crts.		
Ochre—			
Rouen,	29 cks.		
Pitch—			
Antwerp,	22 cks.		
Potash—			
Rotterdam,	11 cks.		
Treport,	4 4 dms.		
Rosin—			
Savannah,	4,200 cks.	Co-op. W'sale Society, Ltd.	
Saltpetre—			
Rotterdam,	65 kgs.		
Sodium Chlorate—			
Rouen,	4 cks.		
Sodium Phosphate—			
Rotterdam,	13 cks.		
Starch—			
Hamburg,	208 cs. 100 bgs.		
Rotterdam,	140		
Ghent,	77		
Antwerp,	130		
Tartar Emetic—			
Hamburg,	2 cks.		
Ultramarine—			
Hamburg,	21 cks. 2 cs.		
Wood Pulp			
Sannesund,	3,953 bls.		
Christiania,	2,000	C. Christopherson & Co.	
Drammen,	1,000	Becker & Co.	
"	160	E. Lanc. Paper Mil. Co.	
Gothenburg,	680		
Rotterdam,	60 pks.		
Ahus,	5,751	Manchester Ship Canal Co.	
Zinc Ashes—			
Antwerp,	8 cks.		
Zinc Chloride—			
Rotterdam,	6 cks.		
Zinc Oxide—			
Antwerp,	47 brls.		
Zinc White—			
Rotterdam,	15 cks.		

HULL.

Week ending April 6th.

Acetic Acid—			
Rotterdam,	1 ck.	Hutchinson & Son	
Acid—			
Rotterdam,	5 balloons	W. & C. L. Ringrose	
Aniline Colour—			
Rotterdam,	1 ck.	W. & C. L. Ringrose	
Asbestos—			
Rotterdam,	3 bls.	W. & C. L. Ringrose	
Antwerp,	5 cs.	Wilson, Sons, & Co., Ltd.	
Barytes—			
Rotterdam,	126 cks.	W. & C. L. Ringrose	
Antwerp,	100 bgs.	Bailey & Leatham	
Bremen,	48	Veltmann & Co.	
"	26	Hanger, Watson & Harris	
Rotterdam,	50	Hutchinson & Son	
Antwerp,	200		
Chemicals (otherwise undescribed)			
Antwerp,	8 cks.		
Hamburg,	10 brls.	Wilson, Sons, & Co., Ltd.	
Dunkirk,	6	28 dms.	
Antwerp,	60 pks. 51	40 9 cs.	

EXPORTS OF CHEMICAL PRODUCTS OF THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON. ending April 10th.

Carbonate—	17 c.	£32
Carbonate—	1 t.	£7
Carbonate—	11 c.	11
Carbonate—	11	44
Carbonate—	14 cs.	£37
Carbonate—	10 c.	20
Carbonate—	35 brls.	£240
Carbonate—	1 t.	32
Carbonate—	18 pkgs.	164
Carbonate—	10 cs.	18
Chloride—	14 cks.	£80
Chloride—	2 t.	4
Chloride—	1	38
Sulphate—	100 t.	£1,100
Sulphate—	Mar, 156	14 c.
Sulphate—	50	550
Sulphate—	50	550
Nitrate—	10 c.	£10
Nitrate—	9 t.	19
Nitrate—	2	30
Acid—	4 t.	2 c.
Acid—	10 cs.	£67
Acid—	1	28
Powder—	56 t.	13 c.
Powder—	7 c.	£8
Powder—	1 t.	21
Powder—	2	43
Chloride—	1 t.	£17
Potash—	1 t.	5 c.
Potash—	1 t.	£37
Potash—	4	70
Soda—	44 t.	9 c.
Soda—	6	5
Soda—	45	17
Soda—	5	12
Soda—	1	55
Soda—	5	13
Soda—	1	24
Soda—	6	8
Soda—	11 cs.	3 kgs.
Soda—	1 t.	115
Soda—	5 cks.	10
Soda—	25	41
Soda—	1 t.	50
Soda—	250 brls.	174
Soda—	6	73
Soda—	10 c.	£60
Soda—	10	60
Soda—	2	13
Soda—	3 t.	10 kgs.
Soda—	2	12
Soda—	1	220
Products—	28 cs.	£1,550
Products—	30 drs.	£800
Products—	222 cks.	£3,509
Products—	222	1,436
Products—	1 dm.	198 cks.
Products—	13 dms.	£10
Products—	20	18
Products—	3 cs.	21
Products—	1 cs.	£10
Products—	4,840 brls.	£3,090
Products—	11 cks.	£17
Products—	190 t.	£318
Products—	637	1,067
Products—	990	1,780
Products—	60 brls.	18

Tar	Natal,	20 runs.	£12
Tar	Boston,	134 brls.	68
Tar	Baltimore,	100	50
Tar Oil	Hamburg,	250 brls.	£144
Copper Sulphate—	Genoa,	83 t.	15 c.
Copper Sulphate—	Leghorn,	5	80
Copper Sulphate—	Marseilles,	150	2,400
Copper Sulphate—	Seville,	1	10
Copperas—	Busreh,	5 t.	8 c.
Cream of T	Sydney,	5 t.	£334
Cream of T	Newcastle,	1	5 c.
Cream of T	Konigsberg,	5	17
Cream of T	Auckland,	1	72
Cream of T	Wellington,	5	16
Cream of T	Melbourne,	1	10
Disinfectants—	Perth,	6 cs.	£16
Disinfectants—	Algoa Bay,	131 pkgs.	300
Disinfectants—	Chefoo,	69	24
Disinfectants—	Jamaica,	50 dms.	6 c.
Disinfectants—	E. London,	10	18
Disinfectants—	Melbourne,	10	26
Disinfectants—	Sydney,	5	23
Disinfectants—	Antigua,	30 drs.	2 cks.
Disinfectants—	Calcutta,	2 t.	2
Hypophosphite of Lime—	New York,	7 c.	£124
Magnesia—	Sydney,	1 c.	5 cs.
Manure—	Martinique,	123 t.	3 c.
Manure—	Treport,	19	18
Manure—	Newfairwater,	204	14
Manure—	Jamaica,	10	3
Manure—	Cadiz,	5	51
Manure—	Gothenburg,	79	15
Manure—	Torre del Mor,	593	5
Manure—	Malaga,	10	90
Manure—	Nevis,	4	22
Manure—	Antigua,	15	124
Oxalic Acid—	Odessa,	7 c.	£16
Oxalic Acid—	Melbourne,	3 t.	108
Phosphoric Acid—	New York,	2 c.	£11
Phosphorus—	Sydney,	22 cs.	£313
Picric Acid—	Hamilton,	3 c.	£18
Potash Crystals—	Oporto,	3 c.	£23
Potash Salts—	Townsville,	4 t.	6 c.
Potash Salts—	Normanton,	2	3
Potash Salts—	Delagoa Bay,	22	12
Potash Salts—	Natal,	9	15
Potassium Bromide—	Melbourne,	1 c.	£10
Potassium Carbonate—	Adelaide,	9 c.	£8
Potassium Chlorate—	Hamilton,	4 c.	£9
Potassium Chlorate—	Ottawa,	10	23
Potassium Cyanide—	Sydney,	20 cs.	£200
Potassium Iodide—	Melbourne,	1 c.	£64
Prunella—	New York,	1 t.	3 c.
Saltpetre—	Rio de Janeiro,	10 t.	4 c.
Saltpetre—	Melbourne,	1	10
Saltpetre—	Auckland,	2	12
Saltpetre—	Toronto,	1	3
Saltpetre—	Hamilton,	4	32
Saltpetre—	Sydney,	4	92
Sheep Dip—	M. Video,	1 t.	19 c.
Sheep Dip—	Algoa Bay,	6	13
Sheep Dip—	Pt. Elizabeth,	10 cs.	15
Soda—	Demerara,	1 t.	7 c.
Soda—	Pelotas,	10	5
Soda Ash—	Los Angeles,	27 t.	11 c.
Soda Crystals—	Valparaiso,	10 t.	18 c.
Soda Crystals—	Newcastle,	25	49
Sodium Hypophosphite—	New York,	5 c.	£93

Sodium Sulpho Carbolate—	Philadelphia,	5 c.	£37
Sodium Tartrate—	Melbourne,	6 c.	£16
Sulphur—	Madeira,	40 brls.	17 c.
Sulphur—	Lisbon,	100	69
Sulphuric Acid—	Penang,	3 t.	13 c.
Sulphuric Acid—	Aden,	20 cs.	16
Strontium Carbonate—	New York,	10 c.	£17
Strontium Nitrate—	New York,	2 t.	£47
Tartaric Acid—	Yokohama,	1 t.	£92
Tartaric Acid—	Newcastle,	3 c.	15
Tartaric Acid—	Auckland,	5	24
Tartaric Acid—	Sydney,	15	71
Tin Chloride—	B. Ayres,	4 c.	£50

LIVERPOOL.

Week ending April 10th.

Acetic Acid—	Tampico,	1 t.	3 c.
Albumen—	Boston,	43 bgs.	£165
Alum—	Portland, M.,	3 t.	11 c.
Alum—	Lisbon,	5	1
Alum—	Genoa,	2	12
Alum—	Havana,	1	5
Alum—	Braila,	2	16
Alumina Sulphate—	Portland, M.,	11 t.	2 q.
Ammonium Carbonate—	Seville,	3 c.	£5
Ammonium Chloride—	Alexandria,	2 t.	9 c.
Ammonium Chloride—	Melbourne,	1	24
Ammonium Chloride—	Volo,	6	12
Ammonium Chloride—	Salonica,	2	9
Ammonium Chloride—	Stockholm,	3	3
Ammonium Chloride—	Antwerp,	13	2 q.
Ammonium Chloride—	Genoa,	1	26
Ammonium Chloride—	Seville,	11	21
Ammonium Chloride—	Yokohama,	1	10
Ammonium Sulphate—	Bruges,	50 t.	£540
Ammonium Sulphate—	Newport News,	50	2 c.
Ammonium Sulphate—	Ghent,	28	17
Ammonium Sulphate—	Barcelona,	70	19
Ammonium Sulphate—	Hamburg,	10	3
Ammonium Sulphate—	Valencia,	171	16
Arsenic—	B. Ayres,	10 t.	£150
Asbestos—	Para,	1 cs.	1
Asbestos—	Tongshaw,	1	1
Bleaching Powder—	Baltimore,	208 cks.	70 bxs.
Bleaching Powder—	Bruges,	67	25 cs.
Bleaching Powder—	Calcutta,	10	10
Bleaching Powder—	Leghorn,	10	20
Bleaching Powder—	Naples,	20	465
Bleaching Powder—	New York,	465	178
Bleaching Powder—	Philadelphia,	178	20
Bleaching Powder—	Venice,	20	40
Bleaching Powder—	Bombay,	564	26 brls.
Bleaching Powder—	Boston,	18	33
Bleaching Powder—	Havana,	133	15
Bleaching Powder—	Newport News,	133	15
Bleaching Powder—	Pasages,	15	1
Boracic Acid—	Yokohama,	3 t.	1 q.
Boracic Acid—	Rotterdam,	6	7 c.
Borax—	Piraeus,	1 t.	4 c.
Borax—	Antwerp,	6	6
Borax—	Callao,	2	40
Borax—	Yokohama,	3	9
Borax—	Rotterdam,	78	15
Borax—	Hamburg,	1	8
Calcium Chloride—	Shanghai,	5 t.	3 c.
Calcium Chloride—	Odessa,	15	4
Carbolic Acid—	Seville,	2 c.	£7
Carbolic Acid—	Baltimore,	8 t.	17
Carbolic Acid—	Hamburg,	9	14
Carbolic Acid—	Calcutta,	1 cs.	3

Caustic Potash—	Antwerp,	2 t.	15 c.
Caustic Potash—	Newport News,	4	11
Caustic Soda—	Boston,	174 dms.	30 brls.
Caustic Soda—	Brisbane,	60	10 bxs.
Caustic Soda—	Cartagena,	58	10
Caustic Soda—	Catania,	10	20
Caustic Soda—	Corunna,	50	15
Caustic Soda—	Detroit,	15	33
Caustic Soda—	Fiume,	15	108
Caustic Soda—	Hamburg,	33	45
Caustic Soda—	Havana,	108	60
Caustic Soda—	Leghorn,	45	108
Caustic Soda—	Malaga,	60	10
Caustic Soda—	Messina,	108	50
Caustic Soda—	Naples,	10	50
Caustic Soda—	Newport News,	505	87
Caustic Soda—	Pernambuco,	75	87
Caustic Soda—	Piraeus,	20	87
Caustic Soda—	San Francisco,	65	87
Caustic Soda—	Seville,	200 kgs.	419
Caustic Soda—	Tarragona,	30	30
Caustic Soda—	Wellington,	20	30
Caustic Soda—	Adelaide,	30	135
Caustic Soda—	Amsterdam,	135	5
Caustic Soda—	Ancona,	5	65
Caustic Soda—	Antwerp,	65	304
Caustic Soda—	Baltimore,	304	70
Caustic Soda—	Barcelona,	80	80
Caustic Soda—	Bari,	10	20 cks.
Caustic Soda—	Bombay,	10	10
Caustic Soda—	Callao,	20	20
Caustic Soda—	E. London,	20	34
Caustic Soda—	Ibrail,	34	10
Caustic Soda—	Maracaibo,	10	5
Caustic Soda—	Maranham,	5	30
Caustic Soda—	Newfairwater,	30	247
Caustic Soda—	New York,	247	29 crts.
Caustic Soda—	Philadelphia,	29	20
Caustic Soda—	Porto Alegre,	20	220
Caustic Soda—	Stettin,	220	15
Caustic Soda—	Stockholm,	15	19
Caustic Soda—	Tampico,	19	10
Caustic Soda—	Valparaiso,	10	50
Caustic Soda—	Yokohama,	50	50
Chemicals (otherwise undescribed)	Konigsberg,	1 t.	2 c.
Chemicals (otherwise undescribed)	Newfairwater,	1	8
Chemicals (otherwise undescribed)	Smyrna,	1	39
Chemicals (otherwise undescribed)	Antwerp,	10	39
Chemicals (otherwise undescribed)	Rotterdam,	1	1
Chemicals (otherwise undescribed)	Boston,	3	39
Chemicals (otherwise undescribed)	New York,	5	2
Chemicals (otherwise undescribed)	Genoa,	1	10
Chemicals (otherwise undescribed)	Constantinople,	4	7
Chemicals (otherwise undescribed)	Christiania,	0	16
Chemicals (otherwise undescribed)	Marseilles,	1	16
Chemicals (otherwise undescribed)	Philadelphia,	25	16
China Clay—	Barcelona,	10 t.	10 c.
China Clay—	Boston,	1,304	10 c.
China Clay—	Lisbon,	6	20
China Clay—	Bombay,	20	80
China Clay—	Calcutta,	80	10
China Clay—	Lisbon,	10	40 bgs.
China Clay—	Tampico,	40 bgs.	10
Coal Products—	Aniline Dyes	2 cks	10
Coal Products—	Aniline Salts	1 ck.	10
Coal Products—	Lisbon,	1	40 kgs
Coal Products—	Oporto,	10	40 kgs
Coal Products—	Piraeus,	10	40 kgs
Coal Products—	Benzol	1 cs.	10
Coal Products—	Calcutta,	1 cs.	10
Coal Products—	Naphthaline Colours	3 cks	10
Coal Products—	New York,	3 cks	10
Coal Products—	Pitch	50 brls.	10
Coal Products—	Catania,	1,441 t.	5 c.
Coal Products—	Cette,	1,441 t.	5 c.
Coal Products—	Ibrail,	10	10
Coal Products—	New York,	245	5
Coal Products—	Tar	10 brls.	50
Coal Products—	Lagos,	10 brls.	50
Coal Products—	Sulina,	50	50
Coal Products—	Tar Salts	1 t.	4 c.
Coal Products—	New York,	1 t.	4 c.
Cobalt Oxide—	Gijon,	1 c.	3 q.
Cobalt Oxide—	Rotterdam,	4	108
Cobalt Oxide—	Antwerp,	1	108
Copperas—	Alexandria,	26 t.	£40
Copperas—	Valparaiso,	1	5 c.

Copper Sulphate—

Seville,	17 t.	6 c.	£271
Leghorn,	89	10	2 q. 1,282
Naples,	87	7	1,319
Genoa,	54	15	1
Piræus,	15		
Adelaide,	3		45
Tarragona,	21	15	1
Brindisi,	31	19	2
Cette,	433	3	3
Rosenduz,	59	12	3
Oporto,	26	18	1
Lisbon,	14	14	2
Venice,	97	10	3
Valencia,	10	18	3
Barcelona,	27	15	
Ancona,	17	4	3
Bari,	6	4	3
Trieste,	2	8	2
Christiansburg,	4 cks.	5	4
M. Video,	4	13	70
Rotterdam,		9	2
Palermo,	3	1	3
Antwerp,	1	9	2
S. Jose de Guate.,		1	3
Danzig,	1	1	2
Konigsberg,	3	7	35
Stettin,	1	8	2
Copenhagen,	3	1	1
Nantes,	19	15	296
Rio de Janeiro,	19	3	15

Disinfectants—

Kuba,	5 t.	10 c.	£210
Stampon,	1		6
Calcutta,	3 cks.	6 cks.	9

Gelatine—

New York,	175 lbs.		
Boston,	75		

Glass—

Boston,	7 cks.		
London,	1		
Stampon,	12 cks.		
Corona,	10 lbs.		

Guanine—

Valencia,	27 t.	1 c.	£230
-----------	-------	------	------

Lime—

Porto Novo,	12 t.	10 c.	2 q. £15
Lagos,	25	10	

Magnesite—

Canal,	2 cks.		
New York,	22		
Seville,	12		

Manganese—

E. London,	14 cks.		
------------	---------	--	--

Manure—

St. Malo,	374 t.	19 c.	3 q. £1,799
-----------	--------	-------	-------------

Muriatic Acid—

Copeland,	5 cks.		£3
-----------	--------	--	----

Ochre—

E. London,	20 lbs.		
Valparaiso,	80		

Oxalic Acid—

Stettin,	1 t.	4 c.	£21
----------	------	------	-----

Palat—

Baltimore,	1 ck.		
B. Ayres,	27		
Delago Bay,		6 cks.	
Havana,	1	10 kgs.	
Huamaco,	4		
Lagos,		120	
Malta,	30	2	
Manas,	7		
Mayaguez,		100 dms.	
New York,	10		
Old Calabar,		4	
Pt. Natal,	37 cks.		
Porto Rico,	3		
Rosario,	3	25	
Adelaide,	6		
Antwerp,	8 lbs.	3	27
Benguela,	3		13
Cabenda,	13		
Luanda,		10	
M. Video,	8		
Newport News,	114		
Pera,	5		
Porto Alegre,	7		
Salt Pond,		10	
Savannah,		150	
Smyrna,		40	

Paints—

Alexandria,	25 cks.		
Algoa Bay,		120 dms.	
Boston,	23		
Boston,	14		
E. Ayres,	109 lbs.	400 kgs.	80 cks.
Calcutta,	2		
Calao,	7	30	
C. C. Castle,			1
Cerro Azul,			1 brl.
Danzig,	100 lbs.		
Osaka,	10	425	
Rotterdam,		75	
Sanitar,			

Paints' Colours—

Alexandria,	25 cks.		
Algoa Bay,		120 dms.	
Boston,	23		
Boston,	14		
E. Ayres,	109 lbs.	400 kgs.	80 cks.
Calcutta,	2		
Calao,	7	30	
C. C. Castle,			1
Cerro Azul,			1 brl.
Danzig,	100 lbs.		
Osaka,	10	425	
Rotterdam,		75	
Sanitar,			

Paints' Colours—

Alexandria,	25 cks.		
Algoa Bay,		120 dms.	
Boston,	23		
Boston,	14		
E. Ayres,	109 lbs.	400 kgs.	80 cks.
Calcutta,	2		
Calao,	7	30	
C. C. Castle,			1
Cerro Azul,			1 brl.
Danzig,	100 lbs.		
Osaka,	10	425	
Rotterdam,		75	
Sanitar,			

Paints' Colours—

Alexandria,	25 cks.		
Algoa Bay,		120 dms.	
Boston,	23		
Boston,	14		
E. Ayres,	109 lbs.	400 kgs.	80 cks.
Calcutta,	2		
Calao,	7	30	
C. C. Castle,			1
Cerro Azul,			1 brl.
Danzig,	100 lbs.		
Osaka,	10	425	
Rotterdam,		75	
Sanitar,			

Paints' Colours—

Alexandria,	25 cks.		
Algoa Bay,		120 dms.	
Boston,	23		
Boston,	14		
E. Ayres,	109 lbs.	400 kgs.	80 cks.
Calcutta,	2		
Calao,	7	30	
C. C. Castle,			1
Cerro Azul,			1 brl.
Danzig,	100 lbs.		
Osaka,	10	425	
Rotterdam,		75	
Sanitar,			

Paints' Colours—

Alexandria,	25 cks.		
Algoa Bay,		120 dms.	
Boston,	23		
Boston,	14		
E. Ayres,	109 lbs.	400 kgs.	80 cks.
Calcutta,	2		
Calao,	7	30	
C. C. Castle,			1
Cerro Azul,			1 brl.
Danzig,	100 lbs.		
Osaka,	10	425	
Rotterdam,		75	
Sanitar,			

Paints' Colours—

Alexandria,	25 cks.		
Algoa Bay,		120 dms.	
Boston,	23		
Boston,	14		
E. Ayres,	109 lbs.	400 kgs.	80 cks.
Calcutta,	2		
Calao,	7	30	
C. C. Castle,			1
Cerro Azul,			1 brl.
Danzig,	100 lbs.		
Osaka,	10	425	
Rotterdam,		75	
Sanitar,			

Paints' Colours—

Alexandria,	25 cks.		
Algoa Bay,		120 dms.	
Boston,	23		
Boston,	14		
E. Ayres,	109 lbs.	400 kgs.	80 cks.
Calcutta,	2		
Calao,	7	30	
C. C. Castle,			1
Cerro Azul,			1 brl.
Danzig,	100 lbs.		
Osaka,	10	425	
Rotterdam,		75	
Sanitar,			

Paints' Colours—

Alexandria,	25 cks.		
Algoa Bay,		120 dms.	
Boston,	23		
Boston,	14		
E. Ayres,	109 lbs.	400 kgs.	80 cks.
Calcutta,	2		
Calao,	7	30	
C. C. Castle,			1
Cerro Azul,			1 brl.
Danzig,	100 lbs.		
Osaka,	10	425	
Rotterdam,		75	
Sanitar,			

Paints' Colours—

Alexandria,	25 cks.		
Algoa Bay,		120 dms.	
Boston,	23		
Boston,	14		
E. Ayres,	109 lbs.	400 kgs.	80 cks.
Calcutta,	2		
Calao,	7	30	
C. C. Castle,			1
Cerro Azul,			1 brl.
Danzig,	100 lbs.		
Osaka,	10	425	
Rotterdam,		75	
Sanitar,			

Paints' Colours—

Alexandria,	25 cks.		
Algoa Bay,		120 dms.	
Boston,	23		
Boston,	14		
E. Ayres,	109 lbs.	400 kgs.	80 cks.
Calcutta,	2		
Calao,	7	30	
C. C. Castle,			1
Cerro Azul,			1 brl.
Danzig,	100 lbs.		
Osaka,	10	425	
Rotterdam,		75	
Sanitar,			

Paints' Colours—

Alexandria,	25 cks.		
Algoa Bay,		120 dms.	
Boston,	23		
Boston,	14		
E. Ayres,	109 lbs.	400 kgs.	80 cks.
Calcutta,	2		
Calao,	7	30	
C. C. Castle,			1
Cerro Azul,			1 brl.
Danzig,	100 lbs.		
Osaka,	10	425	
Rotterdam,		75	
Sanitar,			

Paints' Colours—

Alexandria,	25 cks.		
Algoa Bay,		120 dms.	
Boston,	23		
Boston,	14		
E. Ayres,	109 lbs.	400 kgs.	80 cks.
Calcutta,	2		
Calao,	7	30	
C. C. Castle,			1
Cerro Azul,			1 brl.
Danzig,	100 lbs.		
Osaka,	10	425	
Rotterdam,		75	
Sanitar,			

Paints' Colours—

Alexandria,	25 cks.		
Algoa Bay,		120 dms.	
Boston,	23		
Boston,	14		
E. Ayres,	109 lbs.	400 kgs.	80 cks.
Calcutta,	2		
Calao,	7	30	
C. C. Castle,			1
Cerro Azul,			1 brl.
Danzig,	100 lbs.		
Osaka,	10	425	
Rotterdam,		75	
Sanitar,			

Paints' Colours—

Alexandria,	25 cks.		
Algoa Bay,		120 dms.	
Boston,	23		
Boston,	14		
E. Ayres,	109 lbs.	400 kgs.	80 cks.
Calcutta,	2		
Calao,	7	30	
C. C. Castle,			1
Cerro Azul,			1 brl.
Danzig,	100 lbs.		
Osaka,	10	425	
Rotterdam,		75	
Sanitar,			

Paints' Colours—

Alexandria,	25 cks.		
Algoa Bay,		120 dms.	
Boston,	23		
Boston,	14		
E. Ayres,	109 lbs.	400 kgs.	80 cks.
Calcutta,	2		
Calao,	7	30	
C. C. Castle,			1
Cerro Azul,			1 brl.
Danzig,	100 lbs.		
Osaka,	10	425	
Rotterdam,		75	
Sanitar,			

Paints' Colours—

Alexandria,	25 cks.		
Algoa Bay,		120 dms.	
Boston,	23		
Boston,	14		
E. Ayres,	109 lbs.	400 kgs.	80 cks.
Calcutta,	2		
Calao,	7	30	
C. C. Castle,			1
Cerro Azul,			1 brl.
Danzig,	100 lbs.		
Osaka,	10	425	
Rotterdam,		75	
Sanitar,			

Paints' Colours—

Alexandria,	25 cks.		
Algoa Bay,		120 dms.	
Boston,	23		
Boston,	14		
E. Ayres,	109 lbs.	400 kgs.	80 cks.
Calcutta,	2		
Calao,	7	30	
C. C. Castle,			1
Cerro Azul,			1 brl.
Danzig,	100 lbs.		
Osaka,	10	425	
Rotterdam,		75	
Sanitar,			

Paints' Colours—

Alexandria,	25 cks.		
Algoa Bay,		120 dms.	
Boston,	23		
Boston,	14		
E. Ayres,	109 lbs.	400 kgs.	80 cks.
Calcutta,	2		
Calao,	7	30	
C. C. Castle,			1
Cerro Azul,			1 brl.
Danzig,	100 lbs.		
Osaka,	10	425	
Rotterdam,		75	
Sanitar,			

Paints' Colours—

Alexandria,	25 cks.		
Algoa Bay,		120 dms.	
Boston,	23		
Boston,	14		
E. Ayres,	109 lbs.	400 kgs.	80 cks.
Calcutta,	2		

HULL.

Week ending April 6th.

1 ck.	
25 kgs.	
140 cks.	
6	
60	
10 cks.	
Soda—	
170 dms.	
35	
25	
14 cs. 7 cks.	
2	
5	
20	
2	
2	
26	
1	
12	25
5	
10 pks.	
20 pks.	
7	
1	
28	8
1	6
35	
70	101
1	49
1	12
250 pks.	
6 kgs.	
Oil—	
189 c.	
293	
43	
1,154	
70	
88	
1,832	
100	
3,245	
2,399	
501	
(otherwise undescribed)	
3 cks.	
10	
8	1 cs.
42	1 kg.
60 bgs.	
116 cks.	
Oil—	
43 c.	
12	
86	
82	
74	
144	
133	
977	
400	
193	
119	
49 l.	
2 dms	
11	
1 cs.	
Colours—	
8 cs	
18 cks. 6 dms. 321 kgs.	
76	
2	30
28	
40	5
12	20
40 pks.	
13	
62	20
13	
7	
4	
10	
6	
6	
27	
6 cs.	
13	
61	
194 l.	
205	

Saltcake—

Rouen,	4 cks.
Soap—	
Christiana,	1 cs.
Copenhagen,	2
Drontheim,	40
Reval,	1 ck.
Soda Ash—	
Stettin,	20 cks.
Soda Salts—	
Stettin,	100 bgs.
Starch—	
Gothenburg,	5 bgs.
Tar—	
Akrenas,	6 cks.
Amsterdam,	16
Copenhagen,	48
Gothenburg,	6
Hamburg,	3
Konigsberg,	3
Rotterdam,	2
Reykjavik,	4
Stettin,	7
Treacle—	
Bergen,	50 cks.
Turpentine—	
Alexandria,	150 dms.
Christiana,	5 cks.
Reykjavik,	1
Varnish—	
Akrenas,	2 cs.
Amsterdam,	5
Amsterdam,	2
Copenhagen,	11
Gothenburg,	1
Harlingen,	1
Rotterdam,	4
Reval,	2
Reykjavik,	1
Rouen,	1 bx.

GLASGOW.

Week ending April 11th.

Acid—	
Bombay,	6 t. 15 c.
Ammonium Chloride—	
Gothenburg,	2 t.
Ammonium Sulphate—	
Rotterdam,	10 t.
Hamburg,	20 6 c.
Bleaching Powder—	
Sydney,	5 t. 16½ c.
Borax—	
Russia,	2 t. 6½ c.
Coal Products—	
Creosote	
Russia,	212 t. 10¼ c.
Pitch	
Russia,	72 t. 4½ c.
Calcutta,	8 7
Madras,	11 12½
U.S.A.,	
Tar	
Russia,	396 t. 8¼ c.
Bombay,	22
Calcutta,	
Madras,	3 9½
Christiana,	
Hamburg,	2 10
Tar Oil	
Danzig,	38¼ t.
Coal Products (otherwise undes.)—	
Rotterdam,	12 t.
Dyestuffs—	
Extracts	
Danzig,	6 t. 12 c.
Lead Acetate—	
Bombay,	6 t. 2¼ c.
Linseed Oil—	
Rangoon,	3 t. ¾ c.
Litharge—	
Bombay,	5 t. 15¼ c.
Magnesium Sulphate—	
Sydney,	3 t.
Ochre—	
U.S.A.,	
Paint—	
Rangoon,	
Sydney,	
Bombay,	
Colombo,	
Painters' Colours—	
Rangoon,	
Bombay,	
Cape Town,	
Paraffin Wax—	
Bordeaux,	7 t. 19½ c.
Constantinople,	4 1¼

Marseilles,	2	17¼
Odessa,	1	½
Russia,	20	7
Danzig,	4	2
Rotterdam,	11	
Wupperfeld,	1	18¼
Potassium Bichromate—		
Trebizonde,	6 t.	4¾ c.
Bombay,	3	18¼
Christiana,		
Rotterdam,		
U.S.A.,	27	2½
Rosin Oil—		
Rotterdam,		
Sodium Bichromate—		
Nantes,	4 t.	19 c.
Bombay,	2	19½
Sulphuric Acid—		
Rangoon,	3 t.	15 c.
Colombo,		
Tallow—		
Rangoon,	1 t.	4 c.
Christiana,		5¼
Rotterdam,		11
Treacle—		
Algoa Bay,		
Bergen,	8 t.	13 c.
Christiana,	37	12
Rotterdam,		8
Varnish—		
E. London,		
White Lead—		
Sydney,	20 t.	
Algoa Bay,	1	

TYNE.

Week ending April 6th.

Alkali—	
Aarhus,	10 t.
Rotterdam,	2
Alum—	
Oporto,	6 t. 3 c.
Seville,	3 15
Alumina Sulphate—	
Copenhagen,	15 c.
Ammonia—	
Odense,	2 t. 10 c.
Hamburg,	3
Antwerp,	2 8
Antimony—	
New York,	45 t.
Copenhagen,	1 t. 6 c.
Hamburg,	8
Arsenic—	
Genoa,	2 t. 17 c.
Copenhagen,	1 3
Barium—	
Antwerp,	10 t. 8 c.
New York,	6
Barium Carbonate—	
San Francisco,	12 t.
Barytes—	
New York,	25 t.
Hamburg,	100
Blanc Fixe—	
Copenhagen,	1 t. 19 c.
Bleaching Powder—	
Christiana,	10 t. 3 c.
Aarhus,	5
Odense,	10 10
Oporto,	1 2
New York,	59 16
Rotterdam,	22 5
Harlingen,	10
Trondhjem,	10
Amsterdam,	18
Copenhagen,	72 16
Hamburg,	10 17
Antwerp,	146 6
San Francisco,	66 6
Borax—	
Aalborg,	1 t. 3 c.
Copenhagen,	12 1
Carbolic Acid—	
Christiana,	1 c.
Caustic Soda—	
Christiana,	18 t. 4 c.
Stavanger,	1 14
Aarhus,	1 4
Genoa,	17 8
New York,	131 14
Rotterdam,	15 14
Genoa,	4 18
Copenhagen,	5 17
Hamburg,	40
Antwerp,	17 18
Seville,	3 13
Gothenburg,	45 5
San Francisco,	67 1

Copperas—

Copenhagen,	2 t. 10 c.
Litharge—	
Rotterdam,	5 c.
Copenhagen,	16
Hamburg,	6 t. 2
Magnesia—	
New York,	17 c.
Genoa,	2
Manure—	
Aarhus,	79 t.
Rostock Town,	425
Genoa,	50 11 c.
Paint—	
Rotterdam,	4 c.
Genoa,	3 t. 2
Copenhagen,	1 10
Hamburg,	1 4
Salt—	
New York,	163 t
Antwerp,	7 c.
Slag—	
Rotterdam,	750 t.
Soda—	
Christiana,	24 t. 17 c.
Aarhus,	32
Odense,	10 6
New York,	16 9
Rotterdam,	53 4
Trondhjem,	2 3
Christiansund,	3 5
Amsterdam,	9 17
Genoa,	6 10
Antwerp,	9 17
Soda Ash—	
Christiana,	3 t. 5 c.
Bergen,	5
Copenhagen,	2 14
Gothenburg,	112 16
Sodium Hyposulphite—	
San Francisco,	10 t.
Sodium Silicate—	
Seville,	5 t. 6 c.
Sodium Sulphate—	
Genoa,	20 t. 11 c.
Sulphur—	
Antwerp,	6 t.
Gothenburg,	5
White Lead—	
Christiana,	1 t. 13 c
Copenhagen,	6 7

GOOLE.

Week ending April 3rd.

Alkali—	
Rotterdam,	1 ck.
Benzol—	
Hamburg,	73 cks.
Rotterdam,	73 23 dms.
Coal Products (otherwise undes.)—	
Boulogne,	1 ck. 1 cs.
Hamburg,	55
Rotterdam,	137 1
Dyestuffs (otherwise undescribed)	
Ghent,	1 ck.
Hamburg,	139
Rotterdam,	3
Manure—	
Boulogne,	37 bgs.
Bruges,	100
Ghent,	186
Rouen,	15
Painters' Colours—	
Antwerp,	4 cks.
Boulogne,	11 1 cs 1 dm.
Hamburg,	3 1
Pitch—	
Antwerp,	381 t.
Dunkirk,	233

GRIMSBY.

Week ending April 6th.

Ammonium Sulphate—	
Hamburg,	31 t.
Chemicals (otherwise undescribed)	
Dieppe,	3 cks. 1 cs.
Hamburg,	41 10 pks.
Rotterdam,	8
Coal Products (otherwise undes.)—	
Antwerp,	84 t.
Dieppe,	65 cks.
Rotterdam,	28 9 cs.
Painters' Colours—	
Dieppe,	6 cks. 1 cs.

PRICES CURRENT.

WEDNESDAY, APRIL 17th.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may

Acids:—		£	s.	d.
Acetic, 25 % and 40 %	per cwt.	6	3	9/3
" Glacial	"	40	0	0
Arsenic S.G., 2000	per lb.	0	15	0
Fluoric	per lb.	0	0	3 3/4
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0	10
" (Cylinder), 30° Tw.	"	0	3	0
Nitric 80° Tw.	per lb.	0	0	1 3/4
Nitrous	"	0	0	1 3/4
Oxalic	nett	0	0	3 3/4
Phosphoric, 1750	"	0	0	11
Picric	"	0	0	10
Sulphuric (fuming 50 %)	per ton	15	10	0
" (monohydrate)	"	5	10	0
" (Pyrites, 168°)	"	3	0	0
" " 150°	"	1	5	0
" (free from arsenic, 145°)	"	1	6	0
Sulphurous (solution) S.G. 1025	"	3	0	0
Tannic (pure)	per lb.	0	1	0
Tartaric	"	0	0	10 3/4
Arsenic, white powdered	nett per ton	14	15	0
Alum (loose lump)	"	4	15	0
Alumina Sulphate (pure)	"	4	12	6
Aluminaferric	"	2	7	6
Aluminium	per lb.	0	2	10
Ammonia, Anhydrous	"	0	1	3
" 880 = 28° B.	per lb.	0	0	3
" = 24° B.	"	0	0	2 3/4
" Carbonate	nett	0	0	3 3/4
" Muriate	per ton	22	10	0
" (sal-ammoniac) 1st & 2nd	per cwt.	39	3	37/4
" Nitrate	per ton	40	0	0
" Phosphate	per lb.	0	0	8 1/4
" Sulphate (grey) London	per ton	10	2	6
" (grey) Hall	"	10	2	6
Aniline Oil (guaze)	per lb.	0	0	5 1/4
Aniline Salt	"	0	0	4 3/4
Antimony	per ton	31	0	0
" (tartar emetic)	per lb.	0	0	7 1/2
" (golden sulphide)	"	0	0	10
Barium Chloride	per ton	6	10	0
" Carbonate (native)	"	3	5	0
" Sulphate (native levigated)	"	45	10	75/4
Bleaching Powder, 35 %	nett	7	0	0
" Liquor, 7 %	"	3	10	0
Bisulphide of Carbon	"	11	0	0
Chromium Acetate (crystal)	per lb.	0	0	6
Calcium Chloride	per ton	2	2	6
China Clay (at Runcorn) in bulk	"	15	10	30/4
Coal Tar Products and Dyes:—				
Alizarine (artificial) 20 %	net per lb.	0	0	8
Magenta	"	0	3	9
Anthracene, 30 % A, f.o.b. London	per unit per cwt.	0	1	1
Benzol, 90 % nominal	per gallon	0	1	1
" 50/90	"	0	1	0 1/2
Carbolic Acid (crystallised 40°)	per lb.	0	0	6
" (crude 60°)	per gallon	0	1	6 1/2
Creosote (ordinary)	"	0	0	2
" (filtered for Lucigen light)	"	0	0	2
Crude Naphtha 30 % @ 120° C.	"	0	0	5
Grease Oils, 22° Tw.	per ton	2	10	0
Pitch, f.o.b. Liverpool or Garston	"	1	13	0
Solvent Naphtha, 90 % at 160°	per gallon	0	1	2
Lucigen and Wells Oils	"	0	0	2 1/2
Copper	per ton	40	7	6
" Sulphate	"	15	5	0
" Oxide (copper scales)	"	39	0	0
Glycerine (crude)	"	16	10	0
" (distilled S.G. 1250°)	"	45	0	0
Iodine	nett, per oz.	0	0	9
Iron Sulphate (copperas)	per ton	1	5	0
" Sulphide (antimony slag)	"	2	0	0
Lead (sheet) for cash	"	11	5	0
" Litharge Flake (ex ship)	"	13	5	0
" Acetate (white)	"	24	10	0
" " brown	"	14	10	0
" Carbonate (white lead) pure	"	16	0	0
Nitrate	"	18	15	0
Lime, Acetate (brown)	per ton	5	1	0
" (grey)	"	8	1	0
Magnesium (ribbon and wire)	per oz.	0	0	0
" Chloride (ex ship)	per ton	2	0	0
" Carbonate	per cwt.	1	1	0
" Hydrate	per ton	17	0	0
" Sulphate (Epsom Salts)	per ton	3	0	0
Manganese, Sulphate	"	17	0	0
" Borate	per cwt.	2	0	0
" Ore, 70 %	per ton	4	0	0
Methylated Spirit, 61° O.P.	per gallon	0	0	0
Naphtha (Wood), Solvent	"	0	0	0
" Miscible, 60° O.P.	"	0	0	0
Oils:—				
Cotton-seed	per ton	18	0	0
Linseed	"	21	0	0
Petroleum, American	per gallon	0	0	0
Stearine	per ton	25	0	0
Phosphorus (yellow)	per lb.	0	0	0
" (red)	"	0	0	0
Potassium (metal)	per oz.	0	0	0
" Bichromate	nett	0	0	0
" Carbonate, 90% (ex ship)	per ton	16	0	0
" Chlorate	per lb.	0	0	0
" Cyanide, 98%	"	0	0	0
" Hydrate (Caustic Potash) 80/85 %	per ton	21	0	0
" " (Caustic Potash) 75/80 %	"	19	0	0
" " (Caustic Potash) 70/75 %	"	19	0	0
" Nitrate (refined)	per cwt.	1	0	0
" Permanganate	per cwt.	3	0	0
" Prussiate Yellow	per lb.	0	0	0
" Sulphate, 90 % (ex ship)	per ton	0	0	0
" Muriate, 80 % (do.)	"	8	0	0
Silver (metal)	per oz.	0	0	0
" Nitrate	"	0	0	0
Sodium (metal)	per lb.	0	0	0
" Carb. (refined Soda-ash) 48 %	nett per ton	4	15	0
" " (Caustic Soda-ash) 48 %	"	4	15	0
" " (Carb. Soda-ash) 48 %	"	3	15	0
" " (Alkali) 58 %	"	3	15	0
" " (Soda Crystals)	"	3	15	0
" Acetate (ex-ship)	"	14	0	0
" Arseniate, 45 %	"	11	0	0
" Chlorate	per lb.	0	0	0
" Borate (Borax)	net, per ton	15	0	0
" Bichromate	per lb.	0	0	0
" Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton	"	9	7	0
" " (74 % Caustic Soda)	"	8	7	0
" " (70 % Caustic Soda)	"	7	10	0
" " (60 % Caustic Soda)	"	6	10	0
" " (60 % Caustic Soda, cream) (f.o.b.)	"	6	7	0
" Bicarbonate	"	6	10	0
" Hyposulphite	"	5	10	0
" Manganate, 30%	"	10	0	0
" Nitrate (95 % ex-ship Liverpool)	per cwt.	0	8	0
" Nitrite, 98 %	per ton	29	0	0
" Phosphate	"	14	10	0
" Silicate (glass)	per ton	4	10	0
" " (liquid, 100° Tw.)	"	3	10	0
" Stannate, 40 %	per cwt.	3	2	0
" Sulphate (Salt-cake)	per ton	0	17	0
" (Glauber's Salts)	"	1	5	0
" Sulphide	"	8	0	0
" Sulphite	"	5	5	0
Strontium Hydrate, 100%	"	8	10	0
Sulphocyanide Ammonium, 95 %	per lb.	0	0	0
" Barium, 95 %	"	0	0	0
" Potassium	"	0	0	0
Sulphur (Flowers)	per ton	1	15	0
" (Roll Brimstone)	"	5	0	0
" Brimstone: Best Quality	"	3	10	0
Superphosphate of Lime (26 %)	"	3	7	0
Tallow	"	23	10	0
Tin Crystals	per lb.	0	0	0
" English Ingots	per ton	68	0	0
Zinc (Spelter)	"	14	0	0
" Chloride (solution, 100° Tw.)	"	5	7	0

THE HEMICAL TRADE JOURNAL

AND
OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

414.

SATURDAY, APRIL 27, 1895.

Vol. XVI.

Contents.

PAGE	PAGE
ics	269
Oxidation of Terpenes	270
al Oils	270
le Electrolytic Pheno-	270
on of Superphosphates	271
igence	272
Exhibition and Sanitary	273
Companies	274
of Manure from Town's	274
Chemical Trades	274
nce	275
.....	275
Tar and Ammonia Products	276
Miscellaneous Chemical Market ..	276
Report on Manure Material	276
Liverpool Mineral Market	276
The Metal Market	276
West of Scotland Chemicals	276
Tyne Chemical Report	276
Liverpool Oil and Colour Market ..	277
Hull Paint, Oil, and Colour Report ..	277
New Companies	277
The Patent List	277
Gazette Notices	278
Imports	278
Exports	280
Prices Current	284

ADVERTISEMENTS.

RM of Electrical Engineers in the North of
and desire to receive proposals from Competent Engineers, Chemists,
for the purpose of establishing Works for the manufacture of metals or
electrolytic processes requiring large power. Cheap power up to 600
horses—Address, in confidence, "H R. 152," *Chemical Trade Journal*
Manchester.

KS MANAGER WANTED by a London
of Manufacturing Chemists. Commencing salary £120. A Chemist
experience in same line, who also is thoroughly conversant with brewing
preferred. Apply, giving full particulars and age, to "CARBOY,"
Trade Journal Office Manchester.

Notices.

munications for the *Chemical Trade Journal* should be
and Cheques and Post Office Orders made payable to—
18 BROS., 32, Blackfriars Street, MANCHESTER.

Our Registered Telegraphic Address is—
"Expert, Manchester."

terms of Subscription, commencing at any date, to the
Trade Journal,—payable in advance,—including postage
t of the world, are as follows:—

ly (52 numbers) 12s. 6d.
-Yearly (26 numbers) 6s. 6d.
rtly (13 numbers) 3s. 6d.

will oblige by making their remittances for subscriptions by
Post Office Order, crossed and payable to "Davis Bros."
reports, and correspondence on all matters of interest to the
and allied industries, home and foreign, are solicited.
dents should condense their matter as much as possible,
ne side only of the paper, and in all cases give their names
sses, not necessarily for publication. Sketches should be
parate sheets.

Advertisements.

Advertisements of Situations Vacant, Premises on Sale or To be Let,
us Wants, and Specific Articles for Sale by Private Contract are
the *Chemical Trade Journal* at the following rates:—

30 Words and under 2s. 6d. per insertion
Each additional 10 words 6s. 6d. "

vertisements, Announcements in the Directory Columns, and all Adver-
ot prepaid, are charged at the Tariff rates, which will be forwarded on

sements intended for insertion in the current week's issue
ch the office by **Wednesday morning** at the latest.

CURRENT TOPICS.

THE SANITARY CONFERENCE.

THIS conference was opened on Wednesday morning,
in the Lord Mayor's Parlour, at the Town Hall,
Manchester. The chief features of the first day's proceedings
were the address of A. E. Fletcher, Esq., on air pollution,
and the report of the Committee for the Testing of Smoke
Appliances, read by H. Fletcher, Esq.

Judging from the brief summary given of this report, it
promises to be an important one, and we shall take an early
opportunity of referring more fully to it. The words in
which the Noxious Vapours Abatement Association refer to
it in their report are worthy of attention. They are as
follows: "The work of the Committee for Testing Smoke
Preventing Appliances is now practically ended, and the
issue of its report in the course of a few weeks will deprive
smoke producers of the last shred of cause for continued
pollution of the air. The time is, therefore, appropriate for
a determined effort to put down this nuisance, which is so
fruitful of injury to the public."

This is saying a great deal, and there is no doubt that if
the committee have solved the difficulty of preventing smoke
from intermittent firing they will have earned immortal
fame. Be this as it may, the report promises to be a very
instructive one. The remainder of the programme of the
conference, which terminated on Friday, was a strong one,
including papers and discussions on the air of schools, their
heating, ventilation, and drainage. Meetings were also held
in connection with the Conference, of the Councils for the
Registration of Plumbers, and a number of interesting papers
read. On the evening of Friday, Sir B. W. Richardson
delivered a very helpful address on the necessity of individual
sanitation amongst the working classes.

WHY MIXTURES OF MARGARINE AND BUTTER SHOULD BE ILLEGAL.

An incident has recently occurred in the States which
shows very clearly that mixtures of butter and margarine
should be forbidden by law. Margarine is a very good thing
in itself, and so is butter, but when you come to mixtures it
is a very difficult matter to ascertain whether a mixture
almost wholly composed of margarine is being sold at the
price of butter or not.

The incident to which we refer occurred at a Dairy Show
in Pennsylvania. Unknown to the judges, a manufacturer,
noted for the excellence of the margarine he manufactured,
entered samples of pure margarine in the butter competition.
There is no doubt about the identity of the samples, as the
sender, and the receiver who placed them on exhibition have
both given testimony on oath as to their being genuine.
Under these circumstances it is amusing to learn that these
samples of margarine gained prizes in the butter section over
twenty samples of dairy butter. One of the judges, more-

over, after spending some weeks in an analytical investigation of the samples, reaffirmed his previous decision. Portions of two of the samples have been kept bearing the judge's brand.

There is nothing wrong in all this as far as the manufacturer is concerned, and it is only a pity that all other makers of margarine do not attain to a similar degree of excellence. There can be no doubt, however, as to the hopelessness of trying to differentiate mixtures of butter and margarine, for if it is possible to make a margarine pure and simple, which can take a prize over the heads of a score of genuine butters, and which cannot be distinguished by an expert from ordinary butter, how very much more difficult must the task of detecting mixtures be? Again, if the margarine can be made of such excellent quality, the plea of the necessity of adding a little butter to please the public cannot be deemed reasonable. We want margarine solid as such, and likewise butter; but so long as mixtures are legal the temptation to fraud is so excessive that it is sheer foolishness to expect vendors to withstand it, unless the time of trade morality can be immediately raised to the standard of the millennium.

THE AERIAL OXIDATION OF TERPENES AND ESSENTIAL OILS.

(Continued from page 224.)

Examination of the non-volatile portion of Oxidized Turpentine.

When oxidized Russian turpentine is evaporated down on the water bath until all the volatile matter has apparently been driven off, and the residue is dried for some time at 100° C., a dark brown translucent mass is obtained which, when cold, is quite hard and brittle; an analysis of this substance proved that it had a composition represented roughly by the formula $C_{10}H_{16}O_2$. The following table gives the results of the analysis of the residue obtained by evaporating down different oxidized terpenes and essential oils.

Chemical	Derived from Russian turpentine.					
Calculated	74.75	74.75	74.75	74.75	74.75	74.75
Found	74.75	74.75	74.75	74.75	74.75	74.75
Calculated	14.31	14.31	14.31	14.31	14.31	14.31
Found	14.31	14.31	14.31	14.31	14.31	14.31
Calculated	10.94	10.94	10.94	10.94	10.94	10.94
Found	10.94	10.94	10.94	10.94	10.94	10.94
Chemical	Derived from American turpentine.					
Calculated	74.75	74.75	74.75	74.75	74.75	74.75
Found	74.75	74.75	74.75	74.75	74.75	74.75
Calculated	14.31	14.31	14.31	14.31	14.31	14.31
Found	14.31	14.31	14.31	14.31	14.31	14.31
Calculated	10.94	10.94	10.94	10.94	10.94	10.94
Found	10.94	10.94	10.94	10.94	10.94	10.94
Chemical	Derived from French turpentine.					
Calculated	74.75	74.75	74.75	74.75	74.75	74.75
Found	74.75	74.75	74.75	74.75	74.75	74.75
Calculated	14.31	14.31	14.31	14.31	14.31	14.31
Found	14.31	14.31	14.31	14.31	14.31	14.31
Calculated	10.94	10.94	10.94	10.94	10.94	10.94
Found	10.94	10.94	10.94	10.94	10.94	10.94
Chemical	Derived from camphor oil.					
Calculated	74.75	74.75	74.75	74.75	74.75	74.75
Found	74.75	74.75	74.75	74.75	74.75	74.75
Calculated	14.31	14.31	14.31	14.31	14.31	14.31
Found	14.31	14.31	14.31	14.31	14.31	14.31
Calculated	10.94	10.94	10.94	10.94	10.94	10.94
Found	10.94	10.94	10.94	10.94	10.94	10.94
Chemical	Derived from Eucalyptus oil.					
Calculated	74.75	74.75	74.75	74.75	74.75	74.75
Found	74.75	74.75	74.75	74.75	74.75	74.75
Calculated	14.31	14.31	14.31	14.31	14.31	14.31
Found	14.31	14.31	14.31	14.31	14.31	14.31
Calculated	10.94	10.94	10.94	10.94	10.94	10.94
Found	10.94	10.94	10.94	10.94	10.94	10.94

When the product that is obtained by evaporating down oxidized turpentine on the water bath is digested with hot water, a light brown coloured solution is obtained, which, on evaporation, leaves a residue having a composition represented by the formula $C_{10}H_{16}O_2$, and which appears to be identical with the body obtained in aqueous solution on oxidizing turpentine in the presence of water. It is, however, rather sweet to the taste, whilst the other body is, on the other hand, very bitter.

Examination of a new body deposited from Oxidized American Turpentine.

When so called American "spirits of turpentine" is oxidized by a current of air in the presence of water, it gradually darkens in colour, and increases in specific gravity, until, in fact, like oxidized Russian turpentine though, nor does it oxidize so quickly.

My friend, Mr. R. C. Woodcock, F.I.C., observed that a quantity of oxidized oil of sp. gr. 0.930, made by him in New York, although bright and clear at first, would slowly become cloudy, especially when in the light, and finally a white, slimy precipitate would be

gradually deposited. He was good enough to send me a quantity of this substance, which he had collected and purified by washing with alcohol, in which he observed it to be insoluble, as also in ether, soda, acids, and turpentine. He wrote: "I do not know as that will dissolve it; it fuses at a moderately low temperature, and sets into a resinous mass." As thus roughly purified, it was found to burn when ignited with a bright yellow flame, leaving a residue amounting in one case to 0.24 per cent., and in another case 1 per cent.

An examination of this body confirmed its insoluble character among many other solvents tried without success, may be mentioned petroleum spirit, and oxidized Russian and American turpentine was, however, found to be soluble both in chloroform and carbon bisulphide. In chloroform it forms a glutinous, transparent, resembling tapioca, which gradually dissolves, though it is extremely difficult to get the whole even of a small quantity entirely into solution and on filtering, a gelatinous mass remains behind on the filter, which has to be dried, powdered, and again digested with chloroform in order to get it into solution.

Experiment 1.—A quantity of the powder was partially dissolved in boiling chloroform and filtered, when a clear, light brown colourless filtrate was obtained; ether was then added in excess, and the white precipitate was collected, well washed with ether, dried at 100° C., and analysed.

I. 0.2094 gram gave 0.5893 gram CO_2 and 0.1686 gram H_2O .
II. 0.2069 " " 0.5790 " " 0.1681 "

	Per cent.	Atomic weights.	C = 10.	H = 1.
(a) C	76.75	6.396	10.94	7.13
H	8.94	8.94	13.97	10.94
O	14.31	0.204	1.39	1.09
(b) C	76.58	6.382	10.93	7.11
H	9.05	9.05	14.18	10.94
O	14.37	0.895	1.4	1.09

The remainder of the powder, after analysis, was again dissolved in chloroform, and reprecipitated with methylated ether; after the precipitate was collected, washed with methylated ether, and in the desiccator for three days; it was then dried at 100° C. for 48 hours, and analysed.

0.1726 gram gave 0.476 gram CO_2 and 0.1352 gram H_2O .
0.3421 " " 0.9484 " " 0.2725 "

	Per cent.	Atomic weights.	C = 10.	H = 1.
C	74.81	6.396	10.94	7.13
H	8.71	8.71	13.97	10.94
O	16.48	1.003	1.6	1.09
C	75.60	6.39	10.93	7.11
H	8.35	8.35	14.05	10.94
O	15.35	0.79	1.34	1.09

Experiment 2.—About 1 gram of a fresh supply of the crude product was digested during one hour with absolute alcohol, and after well washed with boiling alcohol. It was then dried at 100° C. dissolved in chloroform, filtered, and precipitated with ether. After washing with ether the precipitate was collected, dried at 100° C. and analysed.

I. 0.2186 gram gave 0.6116 gram CO_2 and 0.1767 gram H_2O .
II. 0.2592 " " 0.7230 " " 0.2082 "

	Per cent.	Atomic weights.	C = 10.	H = 1.
(a) C	76.30	6.358	10.93	7.11
H	8.99	8.99	14.14	10.94
O	14.71	0.919	1.44	1.09
(b) C	76.07	6.355	10.92	7.10
H	8.92	8.92	14.07	10.94
O	15.01	0.938	1.46	1.09

(To be continued.)

A REMARKABLE ELECTROLYTIC PHENOMENON

IN the course of a paper read before the electrical section of the Franklin Institute, Mr. C. J. Reed, drew attention to the following interesting facts:—Most metals, when used as positive electrodes in electrolysis, are either dissolved or corroded, producing metallic ions or oxides; but when used as negative electrodes, metals do not generally undergo such corrosion. They are seldom affected in any way chemically by the action of the current, and are never dissolved. It is to what appears to be an exception to this rule, that I wish call your attention.

While experimenting, some time ago, on the oxidizing effect of various electrolytes upon lead electrodes, I noticed, accidentally, under certain circumstances, lead behaves toward some electrolytes in a very peculiar manner. The only conditions required are that the electromotive force and current density shall be very high.

On passing an electric current through a solution of di-sodium hydrogen phosphate, between electrodes of sheet lead, I noticed nothing unusual during the experiment. The solution had a very high resistance

little current passed even with a high electromotive force. At the experiment, there being no switch in the circuit, the is interrupted by lifting one of the electrodes out of the electrolyte.

It happened to be the negative electrode. Instant of final contact between the electrolyte and the lowest electrode, as it left the solution, I noticed what appeared to be a cloud of black smoke, or precipitate, which had suddenly formed. On examining the cloud more particularly, and the experiment several times, I found that by exposing only the surface of the negative electrode to the solution, there was a voluminous cloud of dark blue or lead-coloured precipitate, which sank in the solution and rendered it entirely opaque. When observed that the lead cathode was being rapidly eaten, that the precipitate was being produced at the expense of the lead precipitate was collected on a filter, washed with water and dried. It was found to be an impalpable powder of lead, and permanent in the air at ordinary temperatures. When ground in an agate mortar, it was reduced to a lustreless gummy mass, did not assume a metallic appearance. Heated to the melting point in the open air, it suddenly absorbed oxygen and formed lead oxide, with incandescence. Heated in a glass tube in the absence of oxygen it melted to globule of metallic lead.

One of this product that has been preserved in a bottle more than two years without any apparent change.

The surface of the lead cathode, after the experiment, exhibited a metallic appearance. It was reduced to a point at the end, and a smooth, shiny surface, like polished lead. It was of the kind one would expect to find a positive electrode of copper or other metal.

Various electrolytes were tried and it was found that the lead precipitate could be produced in the following solutions:

Hydrogen sulphate,	Potassium sulphocyanide,
Sulphuric acid,	" ferrocyanide,
Phosphoric acid,	" ferricyanide,
Hydrogen phosphate,	" iodide,
Hydrogen phosphite,	" bromide,
Sulphate,	" carbonate,
Phosphate,	Calcium chloride (with difficulty),
Sulphate,	Strontium sulphate,
Oxalate,	Manganous chloride,
Phosphite,	Sodium borate,
Phosphate,	Potassium acetate,
Phosphate,	Ammonium hydrate,
Phosphate,	Phosphoric acid,
Phosphate,	Ammoniac sulphide.

Precipitate could not be produced in solutions of the following:

Hydrogen sulphate,	Acetic acid,
Sulphuric acid,	Oxalic acid,
Phosphoric acid,	Ammoniac acetate,
Hydrogen phosphate,	" nitrate,
Hydrogen phosphite,	" chloride,
Sulphate,	Potassium bi-chromate,
Phosphate,	" nitrate.

Precipitate could not be formed in solutions of metallic salts in which a metal can be deposited by electrolysis. It cannot be formed in strong acids having a great affinity for lead.

Ammonium oxalate and a positive electrode of platinum, there being no lead in the solution, appeared to be a deposit of lead, although no lead was originally in the solution. In a subsequent experiment I failed to produce this result.

Experiments were made with negative electrodes of iron, zinc, nickel, manganese, magnesium, aluminium, copper, silver, gold, platinum, bismuth, arsenic, antimony, and tin. Arsenic alone acted in a manner somewhat similar to lead, and disintegrated as a negative electrode. The surface of the electrode where the action took place was smooth, bright, and rounded, like polished lead. A film of brown, solid arsenic hydride was which, instead of sinking, floated away from the electrode in the solution. This hydride was also electrolytically by Sir Humphrey Davy.

Lead electrodes, in a solution of sodium phosphate, some hydrophosphate was produced along with the lead precipitate.

Borax and lead electrodes, the lead precipitate was formed readily; and when the negative electrode was held close to the glass beaker, a bright reddish-brown stratum of liquid was continually formed at the surface of the electrode. This red almost instantly after moving away from the electrode, continually formed as long as the current was strong enough to cause the lead precipitate. The addition of acetic acid did not prevent this formation.

In thiosulphate gave a deposit of sulphur at the positive pole, according to the theory that in the thiosulphates one atom of sulphur is negative, and takes the place of an atom of oxygen in the sulphate.

With sodium sulphite, sulphur dioxide was liberated at the positive plate.

Strontium nitrate, instead of giving the lead powder, gave a blue flame around the point of the lead cathode.

These results seem to indicate the possibility of obtaining, by the use of high electromotive force and high current density in electrolysis, products of an entirely different nature from those of ordinary electrolysis.

THE REVERSION OF SUPERPHOSPHATES.

THE action of oxides of iron and aluminium in effecting the reversion of superphosphates has long been recognised, but, according to the recent experiments of Mr. Alfred Smetham, only imperfectly. The theory of the manufacture of superphosphates is too well known to need special reference, but the mineral phosphates of commerce are not, however, composed wholly of phosphate of lime, but invariably contain impurities. Such impurities are oxide of iron, alumina, carbonate of lime, fluoride of calcium, sand, &c., all of which, with the exception of the first two, have little effect upon the finished product, provided sufficient sulphuric acid has been used to ensure their complete decomposition. The first two, however, have long been believed to exercise a very prejudicial effect upon the keeping properties of superphosphates, as it was found that on keeping the soluble phosphate diminishes, in some cases to a very appreciable extent. Hence, of late years it has been customary among the large manufacturers to stipulate in the contracts for a small minimum percentage of oxide of iron and alumina, any quantity above that fixed amount to be considered as reverting double its weight of soluble phosphate, and a proportional amount deducted from the invoice.

The actual reasons why this ratio came to be adopted appear rather obscure, and the author, as the result of his experience, being doubtful of its reliability, undertook a series of experiments to show the relative reversion powers of iron oxide and alumina.

Though at first sight a somewhat simple task, the author found that laboratory experiments, pure and simple, were useless on account of the widely different circumstances which prevail in manufacturing operations, due to the effect of mass upon the temperature in the den, etc. He therefore worked upon samples obtained in the manufacturing process, devoting attention to two points, namely, the effect produced by known quantities of oxides of iron and aluminium, and to the determination of their solubility at certain intervals after manufacture. The results obtained show that the addition of 1.36 % of Fe_2O_3 reverted at once 1.86 per cent. of soluble phosphate, on keeping nearly a year 2.39 per cent., and in 15 months 2.42 per cent., the theoretical quantity being, according to the reaction previously given, 2.63 per cent. The result of adding 1.1 % of Al_2O_3 is, however, much less marked, the immediate reversion being very small, amounting, even at the end of 15 months, to only 1.02 %, instead of 3.33 %, according to the ratio at present adopted.

In another experiment a super was made from a phosphate containing more alumina than oxide of iron, and, after a lapse of four months, almost all the Al_2O_3 was in the soluble form, while the insoluble phosphate had only increased by 0.07 %. It was thought possible that the use of an insufficient quantity of sulphuric acid might cause the Al_2O_3 to effect a greater amount of reversion. A sample fulfilling this condition after being kept for 12 months revealed, however, the interesting fact that the soluble phosphate had increased by 1.69 per cent.

These results evidence pretty clearly that there is a wide difference in the behaviour of oxide of iron and alumina in the reversion of superphosphate. The first, for practical purposes, seems to revert phosphate in what may be called theoretical proportions, viz., 160 : 310, or as nearly as possible two parts of phosphate to one of oxide of iron, while the alumina, which, if acting in the same manner as oxide of iron, would revert three times its weight of phosphate, at most seems to cause a retrogression of its own weight. It has long been known that superphosphate manufactured from Florida phosphate increases in the percentage of soluble phosphate instead of retrograding, and as this phosphate contains scarcely any oxide of iron, but 2—3 per cent. of alumina, it was difficult to understand this behaviour. The foregoing results, however, explain the matter.

Under these circumstances, and especially as many of the phosphates now coming into the market contain alumina in larger proportions than oxide of iron, there appears to be pressing need for a revision of the terms of the contracts on which phosphates are usually sold, and for a differentiation of oxide of iron and alumina in the analysis upon which the sales are made. Probably the best method of approaching the matter would be for those interested to appoint a joint committee of merchants, manufacturers, and analysts to consider the subject, and to report upon the best way of dealing with it equitably.

Legal Intelligence.

SUPREME COURT OF JUDICATURE.

COURT OF APPEAL.

(Before Lord Halsbury, Lord Justice Lindley, and Lord Justice A. L. Smith).

THE CASSEL GOLD EXTRACTING CO., LD., v. THE CYANIDE GOLD RECOVERY SYNDICATE, LD., AND OTHERS.

(Concluded from page 255.)

Now we come to Simpson's American patent of 1885, which was published in this country prior to the plaintiffs filing their provisional specification. In our opinion, of all the documents put in, when understood, this is the only one which even approaches the point which the defendants put them in to establish. It is a chemical patent for improvements in the processes of extracting gold, silver, and copper from their ores. From it, as in the other specifications, no results were ever attained. But, nevertheless, it is necessary to see what information it imparts to the chemical world. By his specification Simpson first of all crushes the ore. This is common to all extractions of gold. He then mixes the crushed ore with his solution in a tub or bath, and he then allows the mixture to stand until the solid matter is settled and the solution is clear. He then precipitates the metal—i.e., the gold which is in the solution—on to zinc. The solution, which he uses for either gold or copper, is made of cyanide of potassium and carbonate of ammonia, viz., 1lb. of cyanide of potassium and 1oz. of carbonate of ammonia. He says (we assume pointing to Rae's patent) that he is aware that cyanide of potassium when used with an electric current has been used for dissolving metal, and also zinc has been employed as a precipitant, and the use of these he did not wish to be understood as claiming broadly. He also was aware that carbonate of ammonia had been employed for dissolving such metals as are soluble in a solution thereof, and the use of this he did not claim. "What I claim," he said, "as new is the process of separating gold and silver from their ores which consists in subjecting the ore to the action of a solution of cyanide of potassium and carbonate of ammonia, and subsequently precipitating the dissolved metal substantially as set forth." The question is—Does this specification add to the stock of common knowledge so as to inform men skilled in chemistry that, by the application of a very dilute solution of an extremely small quantity of cyanide of potassium alone to gold as it exists in ore in nature, when the ore is crushed the gold can be extracted therefrom, leaving behind the baser metals? It is true that Simpson's 1lb. of cyanide of potassium is about equivalent to the margin of $\frac{1}{2}$ to 2 of cyanide of potassium in the plaintiffs' specification. It appears to us, as laymen, that the compound composed of the combination of the two chemicals—viz., cyanide of potassium and carbonate of ammonia in the proportions mentioned—is not only what Simpson was relying upon but what is the natural meaning of his discovery as described. And it would not lead any one to suppose that a very dilute solution of an extremely small quantity of cyanide of potassium would do alone what it was supposed the compound of the two would do, and which so many desired to attain. But this part of the case does not rest here, for a body of scientific evidence was called as to this. On the plaintiffs' side many witnesses stated emphatically that Simpson's specification would not have led a chemist in 1887 to the knowledge that a solution of cyanide of potassium would act by itself as a solvent of gold in ore, and they gave *in extenso* their reasons for this conclusion. Professor Dewar stated that, if he had read Simpson's patent at its date, he should have understood that he had discovered the carbonate of ammonia possibly to replace the electrical current, and that Professor Austen said the same. On the other side, witnesses, and especially Mr. Vautin, were also explicit that the specification would afford the information. When this evidence is weighed we have no doubt that that given on behalf of the plaintiffs largely preponderates; but there is another fact which seems to us important, and it is this. If Simpson's patent of 1885 informed the chemical world that a small quantity of cyanide of potassium in solution would extract gold from its ore it is strange that no witness (and we cannot find one) called by the defendants has pledged himself that, before the plaintiffs' discovery, he knew that a very dilute solution containing a very small quantity of cyanide of potassium would do so. Upon this point, from among the plaintiffs' witnesses, we will take Professor Dewar, who stated: "It was not common knowledge to me that a cyanide of potassium solution was effective for dissolving gold from its ore." Professor Crookes, who stated "that, up to a few years ago, his opinion was that cyanide of potassium was of no practical use in getting gold out of its ore." And Sir Henry Roscoe, who answered the following question thus:—Q.: "Did you ever hear in the whole range of your experience of that solution being obtained (i.e., gold into solution from ore) by the simple

action of cyanide of potassium upon metallic gold? A.: No, not without a current of electricity employed for dissolving it on one side and depositing it on the other." It is true that Mr. Riley, one of the defendants' witnesses, in answer to a question put by Mr. Justice Romer as to whether in the year 1887 any chemist would have doubted that if he had applied a solution of cyanide of potassium to crushed ore it would have solved the fine gold, answered: "It would if the gold was in a sufficiently divided state. It is a question entirely of the division of the gold." But this, it will be seen, did not answer the learned Judge's question, and he further proceeded: "My question to you is: Would a chemist, in the beginning of 1887, have felt any doubt that a cyanide of potassium would have solved the gold and silver? A.: I should have no doubt myself if the gold was in a sufficiently fine divided condition it would have dissolved it." This, again, did not answer the question, so the learned Judge asked him this:—Q.: "Do you think it would have required experiment to find that out? A.: I think not. I think it was a chemical fact that was generally known." It will be noticed that even under this pressure, he does not venture to say that he knew it, though he says he thought it was a chemical fact that was generally known. Again, Professor Attfield, called by the defendants, was also asked by the learned Judge:—Q.: "Do you think, in the beginning of 1887, any invention was required to discover that a solution of cyanide of potassium could be practically applied to dissolve gold and silver in crushed ore? A.: I do not." Which answer, it will be seen, by no means pledges himself that he knew it. Both of these witnesses' answers are matters of opinion and nothing more, and when we find such men as Professor Dewar, Professor Crookes, and Sir Henry Roscoe stating that they did not know it, and coupling this with the fact that it never had been used for commercial purposes for us doing, we cannot doubt that the fact was not known in the chemical world; and we come to the conclusion that there was novelty in the plaintiffs' discovery, and we adopt what Sir Henry Roscoe stated, that taking the specifications and everything as a chemist, he certainly did not find any indication that cyanide of potassium, if used alone, would be sufficient to do the work. Novelty and utility being established, it goes some way at any rate towards carrying invention. To see if there was invention we turn to Mr. M'Arthur's evidence (it is the first time we have attended to it, simply because he is a party to the case though it is most important upon many parts of the case), where he describes the researches he made before he hit upon that for which he was seeking. Professor Dewar points to the fact that in nature the conditions are so complex that the question could only be solved by experiment and trial, and Lord Kelvin gave evidence to the like effect. Mr. Mactear, called by the defendants, under cross-examination as to the properties of cyanide of potassium, said:—"Cyanide of potassium solution is of such a peculiar nature that I do not think any chemist in the present day knows its composition, or knows the re-actions take place within it, and that the knowledge of it is purely experimental, which is entirely in accord with the plaintiffs' evidence upon this point. We would point out that the invention consists, not merely in discovering that cyanide of potassium can be used to extract gold from its ore but in showing the public the best practical method of doing so, leaving the baser metals behind, which had never occurred to any one before. We cannot doubt that upon the evidence given in this case, which we have only given typical extracts, if the plaintiffs' specification is to be read as contended for by them there is ample novelty as meritorious invention in their discovery. As to its having been anticipated by the prior specifications, it will be remembered that from not one of them has any commercial result ever been obtained. The law applicable to mere anticipation, which all these are, if anticipations at all, is clear, whether you take what Lord Westbury said in "Hill v. Evans," in De Gex, J. and J., p. 299; or Lord Esher, in "Otto v. Linford" (46 *Law Times Reports*, p. 39); or Lord Justice Cotton, in "Erllich v. Thiele" (1 *Patent Cases*, 437); or, indeed, any other of the cases upon the subject. It is this:—That to constitute a paper anticipation the description in the prior specification must be such that a person skilled in the matter reading it would find in it the invention which is sought to be protected by the patent, and unless this can be found in the writing itself it is not an anticipation at all. In our judgment, the existence of a chemical patent wherein the combined effect of two or more chemicals is claimed in order to bring about a desired result does not by any means constitute an anticipation of a subsequent discovery that by the use of one of the named chemicals the desired result can be attained, and *a fortiori* where the compound of the two or more has failed to do so, for, as stated by Professor Mills, there "are any number of cases known in chemistry where two things when put together act very differently from what they do apart;" and we entirely agree with an answer of the defendants' witness, Mr. Vautin, that where the public are told to use a compound of two chemicals, such information certainly does not disclose the fact that either of the two alone will suffice. We are of opinion that neither Simpson's specification nor any of the other four are anticipations of the plaintiffs' invention. We now come to what appears to us to be by far the most formidable part of

regards the validity of the plaintiffs' patent. It is this—true construction of the plaintiffs' specification have they or not for the use of any cyanide of potassium in solution, not at, for the extraction of gold from its ore? If they have, with Mr. Justice Romer that the patent is bad, and it is that the learned Judge has, as it appears to us, mainly based on; for it is then a claim, not only to apply a well-known substance to another well-known substance without stint or limit, but thus to deprive during the continuance of the patent the public from using what they were theretofore entitled to use. It is also a claim for that which is of no utility for, stated, unless cyanide of potassium be used in the limited way by the plaintiffs, by their specification and second claim, state it, it brings into solution the baser metals conjointly with gold, and no beneficial result is attained. If in the specification it had been the second claim alone—*i.e.*, for the dilute solution of the small quantity of cyanide of potassium as therein described, there would not, in our judgment, have been any objection in this case, and we should have been of opinion that the patent was good; and a passage in the judgment of the Court of Appeal, delivered by Baron Bramwell, in "*Hills v. London and North Western Railway Company*" (5 H. and N., at p. 369), is very pertinent to this case. The learned Baron, who was dealing with a patent for the production of gas by the application of hydrated oxides, says this:—"It is said that the mere application of the hydrated oxides to sulphuretted hydrogen from coal gas is not the subject of a patent property of it being previously well known. With that we agree. The answer is that the question is not properly stated. The nature of the hydrated oxide is a principle. If a man were to claim the use of hydrated oxide of iron for the purification of water without saying how it is to be applied, it is possible the claim might be well founded; but here the plaintiff says, 'I claim the manufacture of gas in the way I have described,' and he shows that it can be used. Therefore, this objection fails." In our judgment, the plaintiffs' invention, as claimed by his second claim, has novelty, and utility; it has not been anticipated, and it has been infringed, as to disconformity when the law applicable thereto is borne in mind, in our opinion comes to nothing. In the case of "*Gadd v. Lord of Manchester*" (9 Patent Cases, at p. 529), Lord Justice Lindley stated the law upon this subject, and we do not restate what he said therein. The plaintiffs, in their provisional specification, state the nature of their invention as being that they treat the ore (*i.e.*, crushed) with a solution of cyanide of potassium till the gold is dissolved. In a provisional specification no claim is made by the patentee; he has not to state therein what he does, but how he carries out his invention, but he must state its nature in such a way that the law officers may see what it is, and so that the subject-matter with that of the complete specification may come thereafter may be ascertained. In the complete specification the patentee has to do much more. Not only has he to state what his invention is, but he must particularly describe the invention as to be carried out and performed, and what he does, and then comes the time, applying this rule of law to the case, for the plaintiffs to state the proportions in which they use the cyanide of potassium to be used in the solution to carry out the invention, and that is what they have done. We cannot hold that there is any disconformity as argued by the defendants, assuming that the specification is to be read as the plaintiffs desire that it should be. Here remains the question as to what is the true reading of the specification with claim No. 1 in it. Sir Richard Webster argued that, with the words at the end "substantially as hereinbefore described," limited that claim to the quantity of cyanide of potassium in the solution to be applied to the ore in the same way as described, and he argued that claim 2 was inserted as being only to the richer ores mentioned in the specification, and that in claim 1 was the use of any solution of cyanide of potassium, *i.e.*, of potassium at large, claimed. We cannot read the specification in this way. We would if we could, but we cannot do so. It is that claims 1 and 2 are independent claims, having applied the whole specification, the first making claim for the use of any potassium in solution, irrespective of amount substantially as described; and the second making claim for the use of a dilute solution containing a specified quantity of cyanide of potassium substantially as described. It appears to us impossible to discard one or the other, or to hold that both mean the same thing, claim 1 applies to one part of the specification and claim 2 to the other, in our judgment, is not the true construction of the specification as framed. If the first claim had been omitted or discarded should not have been faced with the difficulty we are; but, the specification, we are unable to read it as the plaintiffs do, and for this reason, and for this alone, we must with a good judgment for the defendants, and dismiss this appeal.

THE HEALTH EXHIBITION AND SANITARY CONFERENCE.

THE International Health Exhibition which has been organised in St. James's Hall, Oxford-street, Manchester, and which will remain open for three weeks, was opened on Monday afternoon by the Lord Mayor of Manchester (Mr. Alderman Lloyd). There was a large and influential gathering.—The Lord Mayor, in declaring the Exhibition open, said the assembly was one the like of which he had not had the privilege of meeting since he was elected to the prominent position which he now occupied. He sincerely trusted that the efforts of the Committee of the Congress would be successful, and that their labours, together with those of the Sanitary Committee of this great city, would result in daily signs that life would be better worth living in the future than it had been in the past. (Hear, hear.) He did not pretend to be a scientist or to know anything of the subject except from a common-sense view of the question. His opinion, however, was that sanitary reforms might be introduced, but that unless they got the people to work with them in those reforms it would be of little avail. He had great pleasure in declaring the Exhibition open.

The announcement was received with applause, and the band played the National Anthem.

The Mayor of Bolton (Mr. Alderman Dobson) having taken the chair, Dr. H. Simpson proposed a vote of thanks to the Lord Mayor. He said one or two of the remarks made by the Lord Mayor would find an echo in the hearts of those present, and one remark that particularly struck him was that it mattered little what efforts were made publicly or by public bodies in the cause of sanitation, nothing would be effectually done unless each individual, each home, and each family did their best to observe sanitary laws in their own persons and households. (Hear, hear.)

Mr. J. Holden seconded the motion.

The Mayor of Bolton, in putting the motion, said he trusted the exhibition would be successful, and that it would have some effect in teaching the people the importance of health and how it might be arrived at.

The motion was passed, and the Lord Mayor having replied, the opening ceremony terminated.

Subsequently a tour of inspection of the exhibition was made, and throughout the afternoon and evening large numbers of people displayed much interest in the various exhibits and in the explanations with regard to them which were offered. The fine band of the Grenadier Guards, under Lieutenant Dan Godfrey, occupied the orchestra, and rendered admirable selections of music. The fairy fountain which occupies the centre of the hall was illuminated by means of the electric light in a very effective manner.

Among the exhibits there is a number of stalls devoted to the chemical side of sanitation to which further reference will be made in our next issue.

On Wednesday, the Sanitary Congress was opened, Sir H. E. Roscoe, M.P., being in the chair.

The conference was preceded by the annual meeting of the Manchester and Salford Sanitary Association. Various resolutions were proposed and passed; the Lord Mayor entering a mild protest against manufacturers being saddled with all the responsibility of air pollution with smoke. Owing to the unavoidable absence of Sir R. Rawlinson, the conference proper was opened by Dr. Simpson, with an address on Sanitary Progress and Reform, dealing with the growth and development of sanitary science in Manchester. Although much has been done to advance matters, he pointed out that there remained yet only too much to be done in battling with disease. Trade pollution was also very serious, and he suggested that the same ingenuity should be exercised in preventing noxious vapours as was displayed by manufacturers in their manufacturing processes. Ald. Walton Smith, in moving a vote of thanks, explained that the requirements of the Local Government Board rendered the erection of the high blocks of buildings compulsory.

A. E. Fletcher, Esq., H. M.'s Chief Inspector of Alkali Works, then delivered an address on Air Pollution, which dealt largely with the good work of the Inspectors under the Alkali Act. He also pointed out the great difficulty of dealing with household smoke owing to the weakness of the public for an open fire. He advocated the heating of houses by stoves in the basement, thereby lessening the use of the open fire, and the extension to smoke, of the compulsory powers given under the Alkali Act.

Other papers and addresses followed on general sanitary matters.

THE NEW RIVERS POLLUTION BILL.—The Rivers Pollution Prevention Bill, introduced into Parliament by Sir Francis Powell, has been issued. The principal object of the Bill is to improve the law for preventing the pollution of streams by extending to county councils, joint committees, and river boards in England, the main provisions of the Mersey and Irwell Act of 1892, and the West Riding of Yorkshire Rivers Act of 1894.

Reports of Companies.

MESSRS. WILLANS & ROBINSON, LTD.

The ordinary general meeting of this company was held last week at the City Terminus Hotel, London. Mr. Mark Robinson presided, and, in moving the adoption of the report, congratulated them on the result of the first year's working, and on the company's prospects. The year 1894 brought them a great increase of orders, and, although they could hardly expect to have a repetition of such an advance in 1895, yet from the 1st of January to that day their orders had amounted to 8,100 horse power, against orders representing 5,800 horse power in the same period of 1894. He wished that all the profit of this increased work, either for this year or the last, came to the company, but it did not. They could only keep pace with their work, if they could keep pace with it, by getting much of it done by others; and their new works were the great desideratum. They had handsomely provided for depreciation, and had not fallen into the mistake of overvaluing their assets. Remembering that they were overtasked at Thames Ditton, and that they had much capital paid up which could not yet be utilised, they would probably agree that earnings large enough, if divided, to pay nearly 11 per cent. on their ordinary shares afforded an earnest of good things to come. If they were contented with the earnings, he hoped they would be equally satisfied with the dividend recommended of 7 per cent., which they hoped to continue to pay until they could with complete safety do better. With regard to their new works at Rugby, they had prepared plans for the immediate building of a machine shop and an erecting shop approximately equal in capacity to those at Thames Ditton, and of a foundry of considerable size, large enough to make them independent of outside purchases of castings. At their next meeting they hoped to report that the works were far on towards completion. Mr. G. B. Clifton (a shareholder) seconded the motion. In answer to questions, the Chairman said he believed that when the balance of their authorised issue of shares was made they would get a quotation on the Stock Exchange. They took their patents at a very low figure, and the question of their expiration did not practically affect the company's prosperity. The motion was adopted.

THARSIS SULPHUR AND COPPER CO., LTD.

The report of the directors of this Company for the 12 months ended December 31, 1894, states that the net profits for the year ended December 31, 1894, together with the balance brought forward from 1893, amounted to £139,948. The directors recommend (1) that the sum of £125,000. be appropriated to the payment of a dividend of 4s. per share, equal to 10 per cent. on the capital of the company, free of income-tax, payable on and after Friday, May 10 next; and (2) that the balance of £14,948. be carried forward to the credit of the year 1895.

MANUFACTURE OF MANURE FROM TOWN'S REFUSE.

THE advantages of water carriage, as opposed to what is generally known as the "pail" system of sewage disposal, have at different times been discussed with considerable heat. In connection with the claim made by the supporters of the latter system, that a much better manure can be made from the "pail" refuse than is possible under any system of combined water carriage and chemical precipitation, it must be admitted that the point is worthy of consideration, at all events as far as the results obtained by the Manchester Corporation at their Holt Town Works are concerned.

Without going into details, it will be sufficient for our purpose to state that of the domestic refuse from about 70,000 pail closets, and 40,000 dust bins with which the Manchester Corporation has to deal, about one-half is disposed of directly through their Water-street depot, while the other half (in conjunction with all the market garbage, condemned fish and meat, and the offal from the slaughter-houses, &c.) is dealt with at the Holt Town Works, and it is to this latter portion that the following remarks are confined.

The collection is effected by two cartage systems, by one of which the closet and dust-bin refuse is collected, the vans being specially made to hold 24 pails and the contents of an equal number of dust bins; by the other the street sweepings and market garbage are collected. To deal with the latter first. As the carts enter the works they move in a circle to a hopper on a level with the floor, through which the paper, rashes, garbage and what-not, fall into a long inclined riddle, being constantly tossed over by a number of attendants. In this way all the combustible portion is separated from the fine ashes and dust, the latter being used for a special purpose, which will be referred to subsequently. The combustible material just referred to is burnt under twelve 60-horse

Galloway destructor boilers, thus supplying all the steam required for power and other purposes. The clinker from these furnaces, worthless as it may appear, is not yet done with, however, for after cooling it is ground, and forms the basis of an excellent mortar, over 18,000 tons of which are annually made and sold at about 4s. per ton at the works.

We now come to the "pail" refuse. This is collected in specially made galvanised iron pails, fitted with lids (closed hermetically by means of a rubber washer), which upon entering the works are speedily opened and tipped into a double hopper, the pails being immediately cleaned out and disinfected with a specially prepared disinfectant, made by mixing carbolic acid with the fine ashes previously described as being separated from the domestic refuse, &c. Returning to the contents of the pails—it is necessary to follow them on to the next floor, where a revolving steam riddle separates all the liquid from the solid portion, which is sold at once as night-soil. The liquid portion, containing a small amount of finely divided solid matter, is run into store tanks fitted with mechanical agitators, where sulphuric acid is added to fix the ammonia, &c. From these store tanks the "stock" is run by gravitation, as desired, into a series of steam-jacketed driers, situated on the floor below. The manure is here reduced to a solid form, and a difficulty was at first experienced, owing to the extremely obnoxious nature of the steam and gases given off during the process. This difficulty has, however, at the suggestion of A. E. Fletcher, Esq., H.M. Chief Inspector of Alkali &c. Works, been obviated by conveying the gases underneath the grates of a series of cremators, in which infectious materials are burnt up; by which means a complete combustion is achieved, and these gases rendered perfectly innocuous. The solid manure thus obtained is stored in large bins of very impressive proportions, from whence it is finally fortified, thoroughly mixed, carried by an automatic conveyer once more to the top floor, filled into bags, and packed into the railway waggons standing on the adjoining siding. The fortification of the manure is a point worthy of special mention, as the Corporation guarantee the manure to always contain from 3½% to 4% of ammonia (in the same form as in guano), 8% bone phosphates, 0.75% potash salts, and 38½% organic matter. To accomplish this end a competent chemist, equipped with a laboratory, continually tests the manure in the bins day by day, calculates the necessary quantity of ground bones and dried fish refuse necessary to fortify the manure, which after fortification and thorough incorporation, is once more tested prior to its being packed for delivery. Seeing that the strength of the manure is guaranteed, the price of £3 per ton is decidedly reasonable, and this manure is worthy the attention of all farmers as being a very cheap and popular manure for all kinds of crops. Further particulars as to terms of carriage can be had on application to R. D. Callison, Esq., Chemical Department, Town Hall, Manchester.

THE STATE OF THE CHEMICAL TRADES.

THE chemical, cement and lead industries in the Wear and Tyne districts are quiet, but paper makers appear to be fairly busy. The same may be said of the calico printing and dyeing industries about Burnley and Accrington. At Barrow-in-Furness paper makers are busy, employment being good. In the neighbourhood of St. Helens and Widnes things are quiet, and the glass works the re-opened recently are not doing much in the way of actual production. The salt trade at Winsford is reported as being rather better, but the chemical industry about Middlewich continues depressed. The Hal paint and colour trade is better, but the seed-crushing mills are quieter partly owing to the scarcity of seed. Business is fairly good with oil colour and varnish makers about Wolverhampton. Flint glass manufacture is very quiet at Birmingham, though sheet glass is rather better. In Cardiff and district there is more activity in the chemical and patent fuel trades.

PREVENTING SEWAGE CONTAMINATION OF THE DEE.—Allen man Johnson, Broughton Hall, Hawarden, the last of a long line of millers of the Dee, recently died, and at their last meeting the Chester Town Council resolved to purchase the historical mills for £7,000, the object being to secure possession of the weir at the mills to improve the boating and navigation, and to prevent the flow of sewage up the river on the tides. It was stated during the discussion that the grant of these mills, with the fishing, was originally made by Edward VI.

PYRITES PRODUCTION IN SPAIN.—In their report for the past year, the Rio Tinto Company, Limited, state that the output of ore from the mines was 1,387,095 tons—about the same as that of last year. The average copper contents were 3.027 per cent., which is slightly higher, comparing with 2.996, 2.819, and 2.649 in the three previous years. The deliveries of pyrites for export, 498,540 tons, have been the largest yet attained, being 29,300 tons over those of last year. The state of the alkali trade in England has been far from favourable; had it been otherwise the deliveries would have been still larger.

Correspondence.

do not hold ourselves responsible for the opinions expressed by our correspondents.

SULPHURIC ACID AND ALKALI.

(To the Editor of the Chemical Trade Journal.)

I see a passage in your review of vol. II. of my "Sulphuric Alkali" directly calls upon a reply from me, I must point out in the first edition (vol. II. p. 608) the surmise was made in my paper on the oxidation of the sulphur compounds in the case of caustic soda, the word "sulphite" was a clerical error. Very likely that surmise was wrong (this is not very likely it does not influence the subsequent reasoning), but as I am now finding any contradiction to the above, I could not at it in the second edition. The reviewer tells us that it is the first time obtained white caustic soda, but I am glad of this information, but in this case as well, I could not at a passage from the first edition which my friend Dr. ever taken the trouble to correct. It is a well understood scientific literature that we are bound to allow priority to the person who publishes a certain invention or discovery, until dis- given to the contrary.

I think I require many apologies for pushing my opinions so far. In my opinion those who go to my book for information to know what explanations I have to give of the facts and I felt simply bound to give my views for what they are. Complaint could only be made if I had "burked" facts given by other competent observers, but I do not think been guilty of such omissions.

I expect I must, with all deference, dissent from the reviewer. I did not eliminate the antiquated methods from my book, I did them, mostly very briefly (in many cases simply referring to them), as a guide to future inventors; both because those "methods" contain many useful germs of novel inventions, without any knowledge of them, much time and money is covering and re-patenting things published a long time ago. In my first edition I pursued this object as stated in the preface. I have been thanked for it by many of my readers.

As to cost accounts, it is well known that since the combination of all British alkali works into one concern, no more data are available for publication. I have had to do the best I can, by giving older cost-accounts, which after all can be used as a guide to the strength of such knowledge of local prices in any case to make proper use of such accounts. In that I am in a much better position for the chapters to be treated in ammonia, soda, chlorine, electrolysis, as I have in these data at hand from quite recent years.

I am, yours otherwise for your very courteous and appreciative remain, yours, &c., G. LUNGE.
April 21st, 1895.

Trade Notes.

RECOVERY BY THE MACARTHUR PROCESS.—54,500 oz. of silver recovered at the Rand and 800 oz. in other districts—100,000 oz.—during March by means of the MacArthur-Forrest process. The February total was 57,560 oz.

CONTRACTS.—The following tenders for sulphuric acid have been accepted by the Bolton Corporation Gas Commissioners, Holman, Mitchell, and Co., for supply of lead gas: Messrs. J. Riley and Son, for 500 tons of sulphuric acid; Messrs. J. Riley and Son, for 400 tons of sulphuric acid.

DEATH.—We regret to learn that Professor James Dwight Dana, mineralogist and geologist, has died of heart failure. He was professor of natural history and geology at Yale College since 1868, and a fellow of the Royal Society, London, as well as a member of the French Academy and other scientific bodies in Europe.

MINING TACTICS.—On Saturday night last, the Belgrave Colliery's factory in Brum-street, Leicester, was discovered on fire. The fire was promptly extinguished, and it was ascertained that there had been a determined attempt to destroy the factory and so jeopardise the lives of the non-unionists who were employed on the premises.

SALT INDUSTRY.—It is not so many years since the discovery of the first salt-mine or salt-pit in South Durham, at Port Dick. Already the production is 318,000 tons yearly; and not far distant richer by that production, but the yield so near the surface has been of the utmost help to the chemical trade of

PETROLEUM FATALITY.—A fire occurred recently at the shop of Mathias Edwards, jeweller, Birstall, near Dewsbury. Miss Marion Edwards returned from a ball at Birstall Church Institute at two o'clock and lit a paraffin lamp. She accidentally fell over the lamp, and had her wrist severely burnt. The paraffin spread about the premises, and the house was soon in flames. Damage estimated at £1,000. was done.

PROSECUTIONS UNDER THE ALKALI, &c., WORKS ACT.—Two prosecutions under this Act have been made in Ireland recently. In one case the offence was neglecting the condensation of the acid gases from manure mixing. The other was for the non-registration of a tar and chemical works. In the former case a penalty of £5. and costs was imposed, and in the latter £15. and costs, which penalty included three years' unpaid fees.

GERMAN CHEMICAL DIVIDENDS.—The *Chemische Fabrik Griesheim*, Frankfurt a. Maine, has declared a dividend of 16 per cent. for the past year, being the same as in 1893. The total returns were M.2,149,261, an increase upon 1893. The *Badische Anilin-und-Soda-Fabrik* state that the total profits for 1894 were M.7,390,110, a decline as compared with 1893. A dividend of 25 per cent. has been declared, being 2 per cent. less than in 1893.

THE BRINE SUBSIDENCES BILL.—Considerable opposition is likely to be encountered by the provisional order Bill under which the Local Government Board propose to enact that all the brine-pumping stations in Cheshire shall be included in one district for the purposes of the law as to compensation for subsidence. Middlewich, Sandbach, and Winsford are anxious that Northwich should not be included in any district or districts of which they may form a part, and it will be on these lines that, with the strong support of the Salt Union, the Bill will be opposed.

ANOTHER EXPLOSIVE.—A new explosive named "Joveite" has been recently tested with very promising results at Washington. It claims to be safe to handle and to fire in shells and in mines, to act equally well as an explosive below the freezing point of water as above it, to be better than dynamite, being 40 per cent. stronger, while it can be produced at about one-third the cost. It was tested in the Laboratory, also its action in bursting a shell in an earth cell was tried at Indian Head. If it continues to act as well as it now promises, we may expect to hear more of it before long. At present it is difficult to say whether it is superior to Roburite, Bellite, and the rest of that class of explosive, for which very similar claims are made and supported.

THE PETROLEUM TRADE.—Referring to the various statements that an agreement has already been arrived at between the American Standard Oil Company and the Russian producers of petroleum for a division between the two parties of the entire trade of the world, the *Hamburgische Boersenhalle* learns that such an agreement has not yet been arrived at, but that the negotiations in the matter are still proceeding. The proposal is at present being considered by M. Witte, the Russian Minister of Finance, and a decision is not likely to be taken before the end of this month at the earliest. In the States the Standard Company controls the situation, and is practically the only buyer. It is estimated to have made £2,000,000. in the past two weeks.

AN ILL-FATED SMOKE-PREVENTING INVENTION.—At the London Bankruptcy Court, on Monday, a summary was issued in the case of Samuel Elliott. It appears from the Official Receiver's observations on the statements of the debtor that he had carried on business for about 37 years, originally as a builder and contractor, and subsequently as a joinery and moulding manufacturer, and that during six years he has also been engaged in developing his patented invention for smoke and fumes annihilation. His total outlay and expenses in connection therewith, he estimates, amounted to about £40,000, including interest and charges on money borrowed to finance the speculation. The accounts which have been furnished show total liabilities £140,226., of which £65,241. are expected to rank. The estimated net assets are £8,224.

THE SCOTCH OIL INDUSTRY.—Anent the recent advance in the price of burning oil, it is stated on an output of 16,000,000 gallons per annum the profits of the Scotch companies will be increased at the rate of £200,000. per annum. In addition 3,000,000 gallons of spirit are produced, which will also bring an extra profit, while the advance of 1/4d. per lb. on wax is estimated to yield £30,000. over and above which it is calculated that the companies are saving at the rate of £50,000. per annum in the cost of fuel as against the prices they paid during the miners' strike last year. The companies, however, are losing at the rate of about £100,000. per annum on sulphate of ammonia, but, even allowing for this, it is estimated that the present position of the Scotch oil trade represents an improvement in profits at the rate of close on £200,000. a year. It remains to be seen, however, whether this will be maintained, and, of course, all depends on the position of affairs in America. Large orders for burning oil are said to have been booked for shipment to London at substantial advances on the old rates.

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzol is dull at 1s. 1d. for 90's and 1s. for 50/90's. There is practically no change in naphthas, both crude and solvent being stationary in price. Carbolic acids, however, keep firm, and are in good request at 1s. 6½d. to 1s. 7d. for 60% crude, and 6d. for 40% crystals. Creosote and anthracene are rather quiet and unchanged in price. Pitch is steady at 3s. to 3s. 5s., f.o.b. East Coast.

In sulphate of ammonia a further serious decline has taken place. The low prices ruling in the North are compelling other sellers to take what they can get, or else forego all participation in the small amount of business there is passing. London value is £9. 15s., Liverpool £9. 15s., Hull £9. 15s., and Leith £9. 12s. 6d.

MISCELLANEOUS CHEMICAL MARKET.

Business in the alkali trade continues moderately active, and prices all round are steady. Bleaching powder, free on rails makers' works, softwoods, £7. per ton, and £7. 5s. hardwoods, f.o.b. Caustic soda is unchanged, and nearest spot prices, f.o.b. Liverpool, are as follows:—77%, £9. 7s. 6d.; 74%, £8. 7s. 6d.; 70%, £7. 10s.; 60%, £6. 10s. nett per ton, 10-ton lots and upwards. Alkali, 58%, £3. 1s. bags, f.o.r., and f.o.b. £3. 5s. bags, and £3. 10s. casks. Soda crystals are without improvement. For chlorate of potash 4½d. to 4½d., and chlorate of soda 6½d. per lb., are current quotations. In yellow prussiate of potash there is a further slight decline to 8d. per lb., with some sellers at 7½d. Sulphate of copper firmer at £15. 10s., f.o.b. Nitrate of soda easier on the spot at 8s. 4½d. per cwt. In potash, caustic and carbonate, stocks are still light, and prices are firm: carbonate, 90/95%, £16. 15s. nett, c.i.f.; caustic, 75/80%, £19. 15s. per ton, nett. White powdered arsenic continues in short supply, and price firm at £14. 15s. per ton, at Garston. Carbolic acid crystals are firm at 6d. In other qualities trade is quiet. Acetate of lime, brown, steady at £5 12s. 6d., grey at £8. 10s. per ton. For acetate of lead there is only small inquiry: £24. 10s., c.i.f., for foreign, and £26 10s. for English make. Acetate of soda £14, c.i.f. Acetic acid, commercial, 40%, sells at 9s. to 9s. 6d. per cwt., in usual districts of consumption. Alum and alum salts generally are quiet, and no immediate outlook for improvement in prices. Aniline oil and salt still offer at low prices, and find only limited sale. Sulphocyanides slightly easier. In chemicals generally trade continues quiet, and there seems to be no prospect of any early improvement.

REPORT ON MANURE MATERIAL.

There has been a moderate business passing, but only for immediate or early delivery, and prices all round favour buyers. There is very little of the activity usual at this season of the year, manure makers' requirements in material being pretty fully covered. The quotation for 75/80% Florida phosphate rock is 7½d. per unit, in cargoes, cost, freight and insurance to good United Kingdom ports, 1895 steamer shipment; for Peace River rock, 6½d. per unit; for South Carolina, 6½d. per unit; and for 55/60% Algerian, 6d. per unit; but these prices do not induce business, and a concession would have to be made for any large lines. River Plate bones are neglected, and for anything afloat about £4. per ton, delivered good to United Kingdom ports, would have to be taken, but for autumn shipment an advance on this price would be necessary. Shippers of crushed Kurrachee bones continue to quote £4. 7s. 6d. per ton for autumn shipment, but this price is quite above United Kingdom buyers' idea of value, though it is reported that the equivalent is being paid for the Continent. Bone meal is in more plentiful supply on the spot, and there are now sellers at £4. 10s. per ton, ex quay. For summer shipment £4. 5s. per ton is the price quoted. Common grinding bones find a ready sale at £4. to £4. 2s. 6d. per ton ex quay Liverpool. Nitrate of soda is again easier. On spot, fine quality may be had at 8s. 3d. per cwt., and ordinary at 8s. 4½d. per cwt., ex quay. Due cargoes and cargoes arrived at port of call are not now worth over 7s. 9d. to 7s. 10½d. per cwt. Dried blood is slow of sale at 9s. 3d. to 9s. 6d. per unit of ammonia, according to position of works, delivered free to rails. There is no River Plate offering.

LIVERPOOL MINERAL MARKET.

Business is brisker this week, but last week's prices are ruling practically unaltered. Manganese: There are but few arrivals to report, which have not materially affected the market. Ground manganese still

continues in steady request at £6., £8., £10., and £12. 10 ton, according to quality. Manganiferous iron ore is unaltered at 16s. per ton for Grecian and 16s. to 17s. 6d. per ton for Sp. c.i.f., in cargoes. Bauxite: Very extensive inquiries are in operation, for Irish Hill brand in particular, arising chiefly from manufacture of aluminium metal therefrom; prices are, consequently, firm, with the probability of an advance, at 20s. per ton for quality, 16s. per ton for second quality, and 12s. per ton for quality, f.o.b. Chrome ore still continues in good demand, and are well maintained at 70s. per ton for 40% and 110s. to 115s. per ton for 50% ore. French chalk: The arrivals this week have all into consumption, and prices are still firm at 70s., 80s., 90s., 110s. per ton for "Angel White" and "Gold Medal" quality. Tungsten metal still continues steady at unaltered prices. The sells freely, the demand for founders' and lubricating oil being well maintained at £5., £6., and £10. per ton, according to quality. Arsenic is still scarce. Barytes: Carbonate is at 60s. to 90s. per ton for fair to good quality; sulphate, 40s. per ton; ground from 45s. to 70s. per ton. China clay: is a fair inquiry for this at 22s. 6d., 30s., and 35s. per ton for prime qualities. Bog ore continues in steady demand at about 2 per ton. Fluorspar: lump and ground is in fair demand at 80s., and 120s. per ton, according to quality. Feldspar is at 35s. to 40s. per ton. Cryolite still remains unaltered at £40. of uranium is steady at from 10s. 6d. to 11s. per lb.

THE METAL MARKET.

LONDON, WEDNESDAY.—Fig iron, unchanged: Scotch was closed at 42s. 9d., Middlesbrough 34s. 9½d. cash, and 43s. 0½d. Copper, firm: Chili bars, G. O. B.'s and G. M. closed at £40. 5s. to £40. 10s. cash, and £40. 13s. 9d. to £40. 18 three months. Tin, steady: Straits closed at £63. 10s. 6d. to 7s. 6d. cash, and £64. 7s. 6d. to £64. 17s. 6d. three months; Ann £64. 10s. English ingots, £68. Lead, steady: Spanish, English, £10. 2s. 6d. to £10. 5s. Silesian spelter: ordinary, 1s. 3d. Nickel, 1s. 2½d. Antimony, £31. Quicksilver: hands, £16. 18s.; second hands, £6. 17s. 6d. Copper: Cape, 1½ to 1¾; Copiapo, 1¾ to 1¾; Libiola, 3¼ to 3½; Mason and Barry, 2½ to 2¾; Rio Tinto, 14 to 14½; Thais to 4½.

TYNE CHEMICAL REPORT.

Chemicals continue dull, and prices do not show any alteration. Bleaching powder is in fair demand, and shipping freely. G 76/77%, is quoted at £9. 10s.; 70%, £7. 15s. Sulphur still at £4. to £4. 5s.

Bleaching powder, softs, £7. 5s. per ton, nett; hard, £7. 10s. per ton, nett; caustic soda, 76/77%, £9. 10s. per ton, nett; do., 70%, £8. per ton, nett; recovered sulphur, 2 cwt. bags, £4. 5s. per ton; soda ash, 48%, £3. 15s. per ton, nett; do., 52%, £4. 2 per ton, nett; do., 56%, £4. 10s. per ton, nett; alkali, 36%, £4. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50% 15s. per ton, nett; do., 52%, £5. 5s. per ton, nett; hypochlorite soda, 5-7 cwt. casks, £6. per ton, nett; do., 1 cwt. kegs, £6. 1 per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7 per ton, nett; soda crystals, casks, £1. 16s. 6d. per ton, gross weight; do., 2 cwt. bags, £1. 16s. 6d. per ton, chlorate of potash, 5½d. per lb., less 6%; pearl ash £3. per ton, nett; pure white sulphate of alumina, £4. 2 per ton, nett; blanc fixe, £7. 10s. per ton, nett; chloride of lime £7. 10s. per ton, nett; carbonate of alumina, £28. 15s. per ton; aluminate of soda, £33. 15s. per ton, nett; in 5 ton lots, 10s. per ton, nett.

SALT.—South Durham salt is unchanged, at 9s. to 9s. 6d. ton, f.o.b. Tees.

COALS.—The market is very little changed, though there is a what better demand for steam coals, and also for coke. Best North briar steam, 8s. 9d. to 9s. per ton; second quality, 7s. 9d. to 8s. ton; small steam, 3s. 9d. to 4s. per ton; gas coals weak, 6s. 6d. 9d. per ton; household coals slack, 10s. to 11s. per ton. Coke 6d. to 13s. per ton.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TONK

It appears to be the case that sulphate of ammonia was had done under £10. in one case at least; but the general idea of it and holders has for the time stopped short at £10. In truth, however, the article is decidedly weak and unreliable, and bottom, possibly not yet been touched. One favourable feature is the better value

hale distillers for their other products, and thereby making inclined to force sales for their sulphate.

Let for general chemicals still continues in its old tendency. Prices, however, do not as yet show any further break, and that with the opening year, and the broadening out of consumption, the next change will be one on the up

side. The advance in this class of investment on exchange has suffered a partial reaction, and has been sub-sounded. The outlook is not to be relied on, as regards burning oils, for we are getting now well into the off consumption, and much may happen before next winter. Meanwhile, for best burning oil are 7½d. and 8d. per gallon, and paraffin unchanged, but all fairly firm.

Prices current are:—Soda crystals, 35s. nett, Tyne; 8/52°, £3. 12s. 6d. to £4. 5s. nett, Tyne; white alkali, 10s. to £5. 5s. nett, Tyne; alum in lump, £5. 10s. nett, austic soda, white, 74° £9., 70/72° £7. 15s., 60/62° and cream 60/62° £6. 10s., all nett, Liverpool; bleaching 10s. to £7., nett, Tyne; saltcake, 17s. 6d.; borax, English, and boracic acid, £30. nett, Glasgow; bicarbonate of soda, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; potash, 4½d. nett, for Scotch and English deliveries (for 1. nett, f.o.b. Glasgow); bichromate of soda, 3¾d. nett, for English deliveries (for export, 3½d. nett, f.o.b. Glasgow); potash, 4¾d. less 5%, Liverpool; nitrate of soda, 8s. 9d.; sulphate of ammonia, £10. prompt f.o.b. ammoniac, first and second white, £39. and £37. nett, any port, copper, £15. 5s. less 5%, Liverpool; paraffin scale, hard soft, 1¾d. to 2½d. per lb.; paraffin wax 120° semi-refined, 4d.; paraffin spirit (naphtha), 5d. to 6d. per gallon; burning), No. 1, 7½d. and crystal 7¾d. at works, for 1 (English sales, ¾d. to ¾d. lower); ditto (lubricating) 865° 0 £4. 10s. to £5., and 890/895° £5. to £5. 10s. Week's sugar at Greenock were 69,934 bags beet unrefined, and beet refined.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

Palm oil is firmer, and there has been more doing. Lagos oil at £21. per ton, transit, on spot, with fairly well altpond and Dix Cove. Olive oil is steady, and in good 30. to £38. 10s. per ton, according to quality. Linseed oil on the whole steady at 20s. 9d. to 21s. 6d. per cwt. for casks in export casks. Cottonseed is steady, with a slight rise, Liverpool makes being quoted 18s. 6d. to 19s. per can 18s. 3d. per cwt. Castor oil is firm, sellers asking 1d. for good seconds Calcutta. First pressure French is 1. to 2½d., there having been sales at the former price. Though in limited inquiry, keeps steady. Resin shows no variation, holders being firm, while there is a fair amount of inquiry. Spirits of turpentine are firm at 23s. per cwt., with a inquiry. Petroleum is strong at 9½d. to 11½d. for 10d. per gallon for Russian refined.

Prices are steady, without alteration in prices. Devonshire, common, £10., medium, £12., best, £15., common, 40s.; medium, 50s., best, 60s.; Welsh, best, 1s. 50s., and common, 18s.; Irish, Devonshire, 40s. to 45s., J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Umber: 1; Devonshire, 50s. to 55s. White lead, £16. Red lead Venetian red, £6. to £10. Cobalt: Prepared oxide, 10s., 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2, 10s. of iron: Common, £7.; medium, £10.; finest, £20. 12s. 10s. to £25.

PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

The situation here since the Easter holidays has maintained the same, and business generally in the face of rising markets has remained - a rise not altogether attributable to sparsity of stock as a good all round demand. The imports here up to end during the same period last year, have been:—Linseed, against 159,890 qrs.; rapeseed, 28,309 qrs. against 41,209 qrs.; 72,120 tons against 93,630 tons; olive oil, 3,745 casks against 3,875 casks against 2,819 casks; oil-tons against 8,332 tons; tallow, 4,405 cwt. against 5,044 cwt., 3,148 barrels against 4,300 barrels. Linseed oil has out 15s. per ton, closing steady at 18s. 10½d., naked, spot; 9s. 1½d.; Sept.-December, 18s. 9d., buyers; boiled and 1. to £2. per ton extra. The export for the fortnight 100 cwt. Refined cotton oil has improved about 5s. per steady at 16s. 9d., naked, spot; May-Aug., 17s. 1½d.;

casks 17s. 6d., and ordinary barrels 25s. per ton extra. Export for the fortnight has been 19,500 cwt. Turpentine in good demand at 23s. 6d. per cwt., in barrels. Castor oil 2½d. per lb. for first pressure. Sod oil very scarce at £16. to £21 per ton. Cod oil £17. to £18. per ton. Boiled drying oil £12. per ton. Soft soap 14s. 6d. per cwt.

CAKES.—Linseed cakes, firm: 95% pure, £6. to £6. 2s. 6d. per ton; Russians, £5. 12s. 6d. to £5. 17s. 6d.; Germans, £5. 17s. 6d. Oil cakes £5 2s. 6d. to £5. 7s. 6d. Cotton cakes steady: best makes, £3. 10s. to £3. 12s. 6d.; seconds, £3 7s. 6d. Rape cakes unchanged.

PAINTS.—Manufacturers find a good demand, and are very busy. Prices are: Ready mixed paints, in lever tins of 1 lb. to 14 lbs., from £24. per ton. White and red leads remain unchanged. Venetian red, oxide of iron, black, blue, green, and yellow ochre paints from £12. per ton. Paint remover 25s. to 30s. per cwt. Ultramarines from 3d. to 8d. per lb. Vermillionettes from 4d. to 9d. per lb. Lime blue £16. per ton. Imperial black varnish £5 10s. per ton, in barrels. Oak varnish from 5s. 6d. per gallon.

New Companies.

Edward Aspinall, Ltd.—CAPITAL £15,000, in shares of £1 each. This company has been formed to take over the business of soap and cosmetic manufacturers of H. E. Aspinall, Rathbone-place, London. The subscribers to the memorandum of association are:—H. E. Aspinall, 26, Clanricarde Gardens, W., manufacturer; E. T. Aspinall, 26, Clanricarde Gardens, W., lieutenant; C. E. Turvey, 8, Teddington Park-road, Teddington, manager; C. L. Green, 128, Bayham-street, N.W., clerk; F. J. Burr, 32, Aldford-street, W., solicitor; A. A. Harnden, 75, Monson-road, New Cross, writer; C. R. Woolley, 4, Courthorpe-road, Hampstead, clerk.

Messrs. Hanger, Watson and Harris, Ltd.—CAPITAL £50,000, in £10 shares, of which 2,500 are 5% cum. pref. shares. This company has been formed to acquire the business of Messrs. Hanger, Watson and Harris, Stoneferry, Kingston-on-Hull, and to trade as paint, oil, colour and varnish manufacturers and drysalters. The subscribers to the memorandum of association are:—E. Hanger, Stoneferry, Hull, colour manufacturer; Mrs. E. Hanger, Stoneferry, Hull; E. Hanger, jun., Stoneferry, Hull, traveller; G. Watson, Brockley Park, Forest Hill, S.E., colour manufacturer; Mrs. G. Watson, Brockley Park, Forest Hill, S.E.; S. Harris, 389, Beverley-road, Hull, colour manufacturer; Mrs. S. Harris, 389, Beverley-road, Hull.

Sopresa Antimony Mines, Ltd.—CAPITAL £16,000, in £1 shares, of which 6,000 are 10% cum. preference. This company has been formed to acquire patents, land and minerals, and other property in Spain and elsewhere, and to carry on the business of antimony miners and merchants. The subscribers to the memorandum of association are:—A. E. S. Olivieri, 277, Ladbroke-grove, W., gentleman; S. Enever, 22, Glenparke-road, Forest Gate, accountant; W. J. Chandler, 12, Gower-road, Forest Gate, warehouseman; W. T. Wilkinson, 10, Howard-road, Stratford, oil and colourman; W. Anmonier, jun., 82, St. Paul's-road, N.W., artist; J. Pouten, 41, Hornsea Rise, N., retired; H. A. Taylor, 217, Hornsea Rise, solicitor.

Thames Block Fuel Works, Ltd.—CAPITAL £10,000, in £1 shares. This company has been formed to carry on the business of block fuel and briquette manufacturers, and to deal in coal, tar and pitch. The subscribers to the memorandum of association are:—D. J. Mackay, 138, Leadenhall-street, E.C.; S. J. Eggar, 6, Crosby-square, E.C., merchant; W. Osmond, 8, Wetherby Gardens, S.W., engineer; J. G. Wall, 29, Old Jewry, E.C., solicitor; P. M. Potts, 116, Gresham-house, E.C., engineer; W. R. Harrower, College Hill-chambers, E.C., accountant; G. C. Harrower, College Hill-chambers, E.C., C.A.

The Patent List.

This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

Manufacture of Cyanides from Beetroots Lyes and Molasses. H. Reichardt and J. Bueb. 7,171. April 8.
Improvements in Producing Blocks of Salt. A. Le Chatelier. 7,193. April 8.
Producing Oxide and other Compounds of Lead for Decorative Purposes, etc. W. H. Akester and H. H. Price. 7,204. April 9.
Manufacture of Superphosphates. A. Deckers. 7,232. April 9.
Improvements in and Apparatus for the Decomposition of Alkaline Nitrates. H. K. Baynes and The Chemical and Electrolytical Syndicate, Ltd. 7,273. April 9.

Apparatus for Separating Carbon-dioxide from the Products of Combustion. H. S. Elworthy and P. D. Henderson. 7,331. April 9.
Manufacture of Chlorine and Treatment of Bye-products. J. Raschen and John Brock. 7,337. April 9.
Manufacture of Ammonia and its Salts from Nitrogen-oxy-Chlorides, or Nitrogen Oxides. J. Raschen and J. Brock. 7,388. April 9.
Improved Soap-Cutting Machines. J. A. Jacobsen and A. M. Milnes. 7,399. April 9.
Improvements in Centrifugal Machines. J. Laflaw and J. W. Macfarlane. 7,347. April 10.
Electrolytical Manufacture of Alkali Chlorates. J. Wetter. 7,364. April 10.
Improvements in Manufacture of Lead Oxide. A. Gutensohn and R. Matthews. 7,351. April 10.
Solidifying and Utilising Carbon Dioxide. H. S. Elworthy and P. D. Henderson. 7,436. April 11.
Manufacture of Carbon Dioxide. H. S. Elworthy and P. D. Henderson. 7,437. April 11.
Improved Soap Extract. A. Luhn. 7,442. April 11.
Fixation of Atmospheric Nitrogen for Manufacture of Ammonia, etc. T. Twyman. 7,444. April 11.

Electrolysis of Metallic Salts. C. Kellner. 7,458. April 11.
Artificial Stone. G. T. Jenkins. 7,549. April 13.
Softening and Purifying Water. S. H. Hodgkin and P. E. Hodgkin.
April 13.
Manufacture of Chloride of Zinc and other Metallic Chlorides.
Hoepfner. 7,560. April 13.

Gazette Notices.

PARTNERSHIPS DISSOLVED.

W. SANDERSON and R. B. ANNISON, wholesale druggists, &c., Sanderson
Cardiff, under the style of W. Sanderson and Co.

IMPORTS OF CHEMICAL PRODUCTS
AT
THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Wash ending April 13th.

[illegible]

Acetate of Lime—
New York, 1,419 bgs.
Antimony—
Antofagasta, 125 sks. Kleinwort, Sons, & Co.
" 146 bgs. Hainsworth Watson
" 381 A. Gibbs & Sons
" 247 Y. Younger
Havre, 64 Cunard S. S. Co., Ltd.
Valparaiso, 861 Hainsworth Watson
" 300
Barytes—
Hamburg, 10 cks.
Borate of Lime—
Mollendo, 616 sks. Brownells & Co.
Iquique, 790
" 518
Borax—
Valparaiso, 1,356 sks.
Castor Oil—
Calcutta, 250 cs. Petrocchino Brs.
" 749 Ralli Brs.
" 100
Chemicals (otherwise unclassified)
Philadelphia, 15 cks.
Antwerp, 4 cs.
Cod Oil—
Hamburg, 10 cks.
Colours—
Stettin, 5 cks. Evans, Sons & Co.
Antwerp, 2 1 cs.
Cottonseed Oil—
New York, 1,000 bbls.
New Orleans, 1,881
Cream of Tartar—
Barcelona, 25 bbls. Bahr, Behrend & Ross
Dextrine—
Stettin, 50 bgs.
Dyestuffs—
Algarroballa
Coquimbo, 220 bgs. L. Leveille
Valparaiso, 250 sks. W. MacQueen
" 696
Argols
Oporto, 23 cks. German Bank
Divi Divi
Hamburg, 292 bgs.
Havre, 1,293 Gough & Crosthwaite
Rio Hacha, 170 t. Leech, Harrison & Co.
Extracts
Bordeaux, 200 cks.
Nantes, 510
Baltimore, 25 bbls. Hervey, Peck & Co.
Fustic
Vera Cruz, 726 lbs. Ledward, Bibby & Co.
Tampico, 1,160 ps. Gruning & Co.
Baltimore, 3,292
Indigo
Calcutta, 10 chts.
Logwood
Puerto Plata, qty.
Sumac
Bordeaux, 170 bbls.
Valonia
Syra, 925 bgs.
" 1,282 Papayanni & Jeremias
Smyrna, 288 t. 814 G. Assayan & Co.
" 55 Barry Brs.
" 2,368
Farina—
Hamburg, 1 bg.
Antwerp, 20
Glucose—
Newport News, 250 bbls.
New York, 400
Glue—
Rouen, 5 cks. R. J. Francis & Co.
Hamburg, 40 bgs.
Stettin, 14 bskts. N. Johansen & Dahl
St. Nazaire, 28 cks.
Rotterdam, 4
Antwerp, 5 cs.

LIVERPOOL.

Week ending April 18th.

Acetate of Lime—
New York, 1,419 bgs.
Antimony—
Antofagasta, 125 sks. Kleinwort, Sons, & Co.
" 146 bgs. Hainsworth Watson
" 381 A. Gibbs & Sons
" 247 Y. Younger
Havre, 64 Cunard S. S. Co., Ltd.
Valparaiso, 861 Hainsworth Watson
" 300
Barytes—
Hamburg, 10 cks.
Borate of Lime—
Mollendo, 616 sks. Brownells & Co.
Iquique, 790
" 518
Borax—
Valparaiso, 1,356 sks.
Castor Oil—
Calcutta, 250 cs. Petrocchino Brs.
" 749 Ralli Brs.
" 100
Chemicals (otherwise unclassified)
Philadelphia, 15 cks.
Antwerp, 4 cs.
Cod Oil—
Hamburg, 10 cks.
Colours—
Stettin, 5 cks. Evans, Sons & Co.
Antwerp, 2 1 cs.
Cottonseed Oil—
New York, 1,000 bbls.
New Orleans, 1,881
Cream of Tartar—
Barcelona, 25 bbls. Bahr, Behrend & Ross
Dextrine—
Stettin, 50 bgs.
Dyestuffs—
Algarroballa
Coquimbo, 220 bgs. L. Leveille
Valparaiso, 250 sks. W. MacQueen
" 696
Argols
Oporto, 23 cks. German Bank
Divi Divi
Hamburg, 292 bgs.
Havre, 1,293 Gough & Crosthwaite
Rio Hacha, 170 t. Leech, Harrison & Co.
Extracts
Bordeaux, 200 cks.
Nantes, 510
Baltimore, 25 bbls. Hervey, Peck & Co.
Fustic
Vera Cruz, 726 lbs. Ledward, Bibby & Co.
Tampico, 1,160 ps. Gruning & Co.
Baltimore, 3,292
Indigo
Calcutta, 10 chts.
Logwood
Puerto Plata, qty.
Sumac
Bordeaux, 170 bbls.
Valonia
Syra, 925 bgs.
" 1,282 Papayanni & Jeremias
Smyrna, 288 t. 814 G. Assayan & Co.
" 55 Barry Brs.
" 2,368
Farina—
Hamburg, 1 bg.
Antwerp, 20
Glucose—
Newport News, 250 bbls.
New York, 400
Glue—
Rouen, 5 cks. R. J. Francis & Co.
Hamburg, 40 bgs.
Stettin, 14 bskts. N. Johansen & Dahl
St. Nazaire, 28 cks.
Rotterdam, 4
Antwerp, 5 cs.

Iodine—
Valparaiso, 3 bbls. A. Gibbs & Son
Lamp Black—
Gothenburg, 40 cs.
Limestone—
Antwerp, 3 crts. 2 cs.
Manganese Ore—
Yokohama, 530 t.
Poti, 3,250 Darwen & Most'n Iron Co.
Mineral—
Vera Cruz, 1,711 bgs. Bessler, Waechter & Co.
Nitrate—
Tocopilla, 3,927 bgs.
Ochre—
Port Royal, S.C., 32 bbls.
Nantes, 24 cks. R. J. Francis & Co.
Rouen, 47
Bordeaux, 48
Stettin, 4
Paint—
Boston, 20 cs.
Paraffin Scale—
New York, 1,331 bbls. Thompson & Bedford
Philadelphia, 400
Paraffin Wax—
Newport News, 105 bbls.
Philadelphia, 132
Phosphate—
Antwerp, 260 t.
Potashes—
Hamburg, 4 cks.
Portland, 30 bbls.
Pyrates—
Huelva, 1,350 t.
Roan—
New York, 178 bbls.
Boston, 500
Saltpetre—
Calcutta, 396 bgs. Ralli Brs.
Hamburg, 20 cks
Karachi, 97
Soap—
Philadelphia, 1,000 bbs. 63 crts.
Jaffa, 4 G. W. Wheatley & Co.
St. Nazaire, 3 cs.
Smyrna, 1
Soapstone—
Philadelphia, 100 bgs.
Bordeaux, 500 G. G. Blackwell Sons & Co.
Sodium Nitrate—
Pisagua, 15,007 bgs.
Iquique, 4,041
Tocopilla, 8,887
Pisagua, 1,600 t. N. Waterhouse & Sons
Sodium Silicate—
Philadelphia, 1 bbl.
Starch—
New York, 1,800 bbs.
Hamburg, 136 cs.
Antwerp, 85 J. T. Fletcher & Co.
" 10 bgs.
Stearine—
Bordeaux, 20 cs.
Antwerp, 38 bgs.
Sulphur Ore—
Huelva, 1,425 t. Matheson & Co.
Tallow—
Shanghai, 330 pkgs.
Rotterdam, 66 tcs.
Tar—
Boston, 101 bbls.
Tartar—
Pisco, 20 sks. B. Burbidge & Co.
Bordeaux, 13 cks.
Tartaric Acid—
Bordeaux, 4 cks.
Rotterdam, 1
Treacle—
New York, 150 bbls.
Philadelphia, 375
St. Nazaire, 2 cs.
Boston, 100
White Lead—
Rotterdam, 13 cks.
Antwerp, 7
Whiting—
Montserrat, 1 tce.

Wood Pulp—
Rotterdam, 103 bbls.
Antwerp, 54 bbls.
Zinc Oxide—
New York, 150 bbls.
Rotterdam, 23 cks.
Antwerp, 175

MANCHESTER.

Week ending April 13th.

Alumina Sulphate—
Rotterdam, 169 cks.
Aluminous Cake—
Rotterdam, 50 bgs.
Barium Chloride—
Rotterdam, 20 cks.
Barytes—
Rotterdam, 4 cks.
Bone Ash—
Rio Grande do Sul, 561 t.
Chrome Alum—
Rotterdam, 30 cks.
Colours—
Rotterdam, 43 cks. 51 cs.
Hamburg, 2
Cottonseed Oil—
Rotterdam, 150 bbls.
Dextrine—
Stettin, 10 bgs.
Dyestuffs—
Alizarine
Rotterdam, 68 cks. 2 cs.
Sumac
Palermo, 300 bgs.
Farina—
Hamburg, 650 bgs.
Stettin, 250
Glue—
Hamburg, 40 bgs.
Lead Acetate—
Rotterdam, 73 cks.
Limestone—
Antwerp, 3 crts.
Litharge—
Rotterdam, 58 cks.
Nickel Sulphate—
Hamburg, 3 cks.
Pitch—
Rotterdam, 13 cks.
Starch—
Rotterdam, 280 cs.
Hamburg, 156
Sulphuric Acid—
Rotterdam, 10 cks.
Tar Waste—
Rotterdam, 8 cks.
Tartar—
Hamburg, 12 cks.
Tartaric Acid—
Rotterdam, 5 cks.
White Lead—
Antwerp, 1 pkge.
Wood Pulp—
Gothenburg, 680 bbls.
Wood Spirit—
Hamburg, 4 dms.
Zinc Ashes—
Rotterdam, 8 cks.
Zinc Oxalate—
Rotterdam, 5 bbls.
Zinc Sulphate—
Rotterdam, 5 bbls.
Zinc White—
Rotterdam, 10 cks.

HULL.

Week ending April 13th.

Acetate—
New York, 1,631 bgs. Aire & Calder N. Co.
Acid—
Bari, 39 cks. Wilson, Sons, & Co., Ltd.
Rotterdam, 4 Hutchinson & Son
Alum—
Rotterdam, 77 cks. W. & C. L. Ringrose
Barytes—
Antwerp, 20 bgs. 128 cks. Bailey & Leatham

Acid— Turne, 60 kgs. £362 and, 10 cks. 3 cs. 98 and, 1 c. 8 Stersburg, 5 kgs. 32 dam, 1 7 ama, 10 61 son, 1 6	Sodium Bicarbonate— Auckland, 1 t. £8 Acacutla, 12 c. 5 Sodium Hypophosphite— Rotterdam, 1 cs. £18 Sodium Hyposulphite— Adelaide, 26 t. 13 c. £137 Sodium Sulphate— Sydney, 2 t. 9 c. £37 Sodium Tartrate— Melbourne, 6 c. £15 Strontium Nitrate— Bombay, 13 c. £20 Sulphur— Algoa Bay, 75 kgs. £38 Sulphuric Acid— Cape Town, 20 cs. £15 Superphosphate— St Kitts, 40 t. 14 c. £132 Terceira, 200 735 Rotterdam, 127 19 450 Tartaric Acid— Auckland, 10 kgs. £46 Boulogne, 5 c. 25 Brisbane, 10 51	Galatz, 1 t. 1 19 B. Ayres, 1 1 Hamburg, 1 2 2 q. 23 Ihrail, 3 3 63 New York, 15 41 Rotterdam, 1 1 21 Vera Cruz, 1 1 21 Antwerp, 7 15 161 Barcelona, 1 19 1 36 Sydney, 1 2 22 Alexandria, 1 80	Caoutchouc— Antwerp, 1 t. 18 Carbolic Acid— Hamburg, 11 t. 8 c. £576 Newport News, 6 18 1 q. 311 Hiogo, 5 9 220 Genoa, 1 11 3 89 Yokohama, 3 10 167 Kobe, 5 245 New York, 10 10 3 273 Castor Oil— Addah, 15 cs. £10 Caustic Potash— Pro. Cabello, 6 c. 43 Barcelona, 1 t. 7 43 San Francisco, 5 3 129 Caustic Soda— Alicante, 20 dms. £43 Antwerp, 19 6 Aracaju, 10 3 q. 25 Balimore, 260 Barcelona, 213 120 cks. Bari, 18 Bombay, 10 Buston, 45 bxs. 100 100 brls. Calcutta, 173 Catania, 30 Ceara, 10 Corral, 20 Dunedin, 18 Fairwater, 188 Galatz, 15 Genoa, 286 10 kgs. Hamburg, 753 Hong Kong, 2 Ibrail, 50 Jaffa, 12 Leghorn, 60 Lisbon, 60 Manaos, 5 Messina, 20 Naples, 49 Newport News, 206 New York, 409 20 cs. 100 brls. Oporto, 95 Palermo, 5 Pernambuco, 100 Philadelphia, 310 Puerto Cabello, 8 Rio de Janeiro, 8 Riga, 430 Rio G. do Sul, 150 Rotterdam, 56 pkgs. Rouen, 65 dms. San Francisco, 125 10 50 bxs. San Sebastian, 50 Santander, 24 17 cks. Santiago, 20 Seville, 80 Shanghai, 29 Singapore, 12 Sourabaya, 35 Stettin, 35 Sydney, 37 Talcuano, 30 Tampico, 280 Tunis, 18 Venice, 38 Vera Cruz, 15 Vigo, 48	Halifax, 50 Lisbon, 6 New York, 40 cks. Philadelphia, 160 Rio de Janeiro, 30 Coal Products— Aniline Colours New York, 13 brls. Oporto, 1 ck. Salonica, 8 cs. Aniline Oil Barcelona, 25 cks. Boston, 10 dms. Genoa, 11 10 Aniline Salts Barcelona, 10 cks. Boston, 16 cs. New York, 26 Naphthaline Colours New York, 2 cks. Pitch Rouen, 169 t. 14 c. Sables d'Blonne, 645 Valparaiso, 30 brls. Tar Genoa, 1 ck. Philadelphia, 100 brls. Tar Salts New York, 5 cks. Copperas— Calcutta, 25 t. 19 c. £43 San Francisco, 17 6 3 q. 25 Copper Sulphate— Nantes, 84 t. 4 c. £1,213 Rouen, 37 17 3 q. 570 Venice, 127 19 1,969 Reval, 2 2 74 Palermo, 2 30 Tarragona, 24 19 1 386 Barcelona, 50 11 778 Genoa, 115 2 2 1,731 Ancona, 31 1 2 523 Bari, 14 7 3 214 Oporto, 29 15 1 462 Lisbon, 105 14 1,562 Passages, 5 2 2 80 Marseilles, 54 11 3 841 Leghorn, 43 18 2 672 Helsinki, 9 9 Christiania, 8 2 6 Bordeaux, 238 7 2 6 Danzig, 10 7 3,426 Dunkirk, 5 2 1 150 Trieste, 10 7 3 141 Naples, 15 18 2 232 Messina, 6 19 2 100 Vigo, 3 12 51 Algiers, 25 5 1 359 Gelatin— Boston, 150 bxs. New York, 100 Glue— Boston, 150 bgs. New York, 50 Piraeus, 1 ck. Puerto Cabello, 5 cs. Guano— Seville, 7 t. 6 c. £69 San Blas, 2 2 20 Valencia, 67 490 Gypsum— New York, 70 t. 8 c. £228 Hydrochloric Acid— N. Orleans, 12 c. 3 q. £14 Iron Oxide— Gijon, 2 t. 11 c. £15 Genoa, 7 4 46 Lamp Black— Bilbao, 5 tcs. Lead Oxide— Pernambuco, 6 c. £6 Lime— C. C. Castle, 4 cks. Lagos, 6 Litharge— Philadelphia, 20 cks. Magnesium Sulphate— Rouen, 30 brls. Manure— Havre, 100 t. 2 c. £318 Antwerp, 28 15 1 q. 116 St. Nazaire, 400 1 q. 1,038 Valencia, 50 10 180 Teneriffe, 1 14 6 Madeira, 1 10 Marseilles, 84 18 470 Las Palmas, 2 23 Nitric Acid— N. Orleans, 11 c. £19 Ochre— Halifax, 5 brls. Kingston Ja., 10 Valparaiso, 5
--	---	--	---	--

Sulphate —	
Atta, 6 brls.	
6 cks.	
12	
Wax —	
60 bgs	
50 9 cs.	
21 cs.	
365 t.	
Bicarbonate —	
10 brls.	
50 brls.	
76 cks.	
31 cks.	
HULL.	
ending April 13th.	
Sulphate —	
180 bgs.	
330	
939	
g Powder —	
25 cks.	
55 80 kgs.	
15	
296	
Soda —	
35 dms	
145	
149	
18	
28	
40	
4	
Is (otherwise undescribed)	
433 pkgs.	4 cs.
20 cks.	
33 65 btl.	
15 34 9 cs.	
10 20	
8	
235	
14 20	
40	
25	
54 51	
25 40 pks.	
ed Oil —	
1,270 c.	
27	
17	
175	
301	
20	
7	
2,177	
369	
100	
4,813	
2,770	
300	
25 brls.	
Is (otherwise undescribed)	
6 cks.	
3 cs.	
1 kg.	
Oil —	
107 c.	
52	
31	
18	
34	
502	
104	
705	
42	
612	
500	
White —	
50 bgs.	

Paint —	
Christiansand, 2 cks.	
Dunkirk, 24 dms.	
Painters' Colours —	
Antwerp, 69 cks. 2 cs. 56 dms.	
Christiansand, 1	4
Copenhagen, 22	
Christiania, 1	
Dunkirk, 2	
Danzig, 2	2 pkgs
Fiume, 4	
Ghent, 38	
Genoa, 12	140
Gothenburg, 2	1
Hamburg, 116	3
Hango, 2	
Konigsberg, 30	
Leghorn, 12	
Libau, 19	
Marseilles, 6	
New York, 70	
Odessa, 64	7
Reval, 4	
Rouen, 64	2
Stettin, 272	3
Paraffin Scale —	
Danzig, 6 cs. 10 bgs.	
Pitch —	
Antwerp, 145 t.	
Dunkirk, 208	
Naples, 329	
New York, 250 cks	
Soap —	
Drontheim, 1 bx.	
Tallow —	
Gothenburg, 2 cks	
Rouen, 72	
Tar —	
Amsterdam, 11 cks	
Copenhagen, 15	
Christiania, 5	
Danzig, 2	
Harlingen, 2	1 brl.
Stavanger, 2	5
Rotterdam, 5	
Stettin, 22	
Varnish —	
Antwerp, 1 ck. 3 dms	
Amsterdam, 2 cs.	
Bordeaux, 3	
Copenhagen, 4	
Danzig, 1	
Ghent, 1	
Gothenburg, 7	
Hamburg, 2	
Marseilles, 4	
Naples, 2	

GLASGOW.

Week ending April 18th.

Ammonium Sulphate —	
Kingston, Jam., 13 t.	
Calcutta, 2	
Asbestos —	
Algoa Bay, 4 c.	
Coal Products —	
Carbolic Acid	475
Rotterdam, 175	
Creosote Oil	418
Christiania, 7	
Pitch	425
Iquique, 909 t. 7 c.	
Santander, 1,050	
St. Nazaire, 250	
U.S.A., 70 t.	
Tar —	
U.S.A., 70 t.	
Dried Blood —	
Rouen, 50 t.	
Dyestuffs —	
Alizarine	
U.S.A., 668 lbs	
Extracts	
U.S.A., 12 t. 11 1/4 c.	
Logwood	
Halifax, 5 t. 3 c	
Gelatine —	
U.S.A., 5,400 lbs	
Linseed Oil —	
Shanghai, 4 t. 5 c.	
Singapore, 4	11
Canada, 15	8 1/2
Magnesium Sulphate —	
Christiania, 10 t.	
Paint —	
Havana, 463	
Natal, 258	
Singapore, 124	
Valparaiso, 249	
Calcutta, 62	

Painters' Colours —	
Trinidad, £41	
Valparaiso, 1 t. 13 1/2 c.	
Calcutta, 157	
Paraffin Wax —	
Algoa Bay, 5 15 1/2 c.	
Cape Town, 7 11 1/4	
Hiogo, 9 10 1/2	
Rouen, 2 15 1/2	
Arendal, 1	
Potassium Bichromate —	
France, 7 t. 10 1/4 c.	
Rouen, 10 16 1/2	
Amsterdam, £200	
Christiania, 108	
Rotterdam, 198	
U.S.A., 32 14 1/4	
Potassium Prussiate —	
Paris, 5 t. 7 1/4 c	
Salt —	
Valparaiso, 5 t. 7 c.	
Soap —	
Valparaiso, 2 t. 10 c.	£16
Antigua, 4 6	
Curacao, 1 2	
U.S.A., 1 2	
W. Indies, £4-13s.	
Sodium Bichromate —	
France, 18 t. 9 c	
Rouen, 5 1 1/4	
Sulphuric Acid —	
Rangoon, £20	
Tallow —	
Rotterdam, 4 t. 17 c.	
Treacle —	
Algoa Bay, 1 t. 14 c	
Gothenburg, 11 12 1/4	
Christiania, 9 13	
White Lead —	
Cape Town, 2 t.	
Calcutta, 2 4 c.	
Montreal, 10 6 1/4	

TYNE.

Week ending April 13th.

Alkali —	
Antwerp, 15 t. 16 c.	
Hamburg, 9 10	
Christiania, 45 4	
Rotterdam, 6	
Amsterdam, 53 14	
Alum —	
Rotterdam, 10 t.	
Barcelona, 4 2 c.	
Ammonia —	
Odessa, 2 t.	
Valencia, 52	
Antimony —	
Amsterdam, 12 c.	
Barcelona, 1 t.	
Arsenic —	
Gothenburg, 6 c.	
Reval, 5 t. 7	
Barium Binoxide —	
Dunkirk, 9 t. 6 c.	
Barytes —	
Hamburg, 101 t.	
Bleaching Powder —	
Copenhagen, 2 t. 6 c.	
Gothenburg, 17 5	
Antwerp, 72 2	
Hamburg, 120 13	
Reval, 49 19	
Christiania, 30 1	
Genoa, 10 1	
Odense, 10 6	
Venice, 4 6	
Copenhagen, 29 13	
Amsterdam, 16 15	
Newfairwater, 5 11	
Caustic Soda —	
Antwerp, 35 t. 10 c	
Hamburg, 22 2	
Christiania, 4 18	
Genoa, 11 12	
Nykjobing, 1 9	
Venice, 2 18	
Valencia, 11 10	
Copenhagen, 24 3	
Barcelona, 70 17	
Amsterdam, 9 17	
Newfairwater, 10 3	
Cod Oil —	
Bergen, 3 c.	
Lamp Black —	
Amsterdam, 1 t. 8 c.	
Lime —	
Genoa, 2 t. 6 c.	

Litharge —	
Hamburg, 15 t. 19 c.	
Rotterdam, 16	
Gothenburg, 4 17	
Magnesia —	
Antwerp, 3 c.	
Hamburg, 1	
Reval, 11	
Cette, 17 lbs.	
Odense, 8	
Odessa, 15	
Barcelona, 5 t.	
Manure —	
Helsingborg, 850 t.	
Nykjobing, 17	
Oxalic Acid —	
Barcelona, 6 t. 16 c.	
Paint —	
Antwerp, 10 c.	
Rotterdam, 19	
Phosphorus —	
Barcelona, 5 t. 9 c.	
Salt —	
Dunkirk, 7 cs.	
Slag —	
Rotterdam, 120 t.	
Soda —	
Antwerp, 15 t. 1 c.	
Christiania, 5 3	
Genoa, 14 1	
Randers, 21 8	
Rotterdam, 9 17	
Venice, 13 5	
Drontheim, 10 2	
Christiansund, 11 17	
Amsterdam, 11 17	
Soda Ash —	
Hamburg, 10 t. 9 c.	
Copenhagen, 26 5	
Newfairwater, 30 10	
Sodium Nitrate —	
Laurvig, 13 c.	
Sodium Silicate —	
Valencia, 3 t. 1 c.	
Sulphur —	
Gothenburg, 10 t.	
Drammen, 150	
Superphosphate —	
Arendal, 10 t.	
Laurvig, 20	
White Lead —	
Gothenburg, 6 t. 12 c.	
Copenhagen, 2 15	

GOOLE.

Week ending April 10th.

Benzol —	
Boulogne, 40 cks	
Hamburg, 48	
Rotterdam, 72 8 dms.	
Chemicals (otherwise undes.) —	
Antwerp, 311 pkgs.	
Boulogne, 1 ck.	
Ghent, 10	
Rotterdam, 2	
Rouen, 4	
Coal Products (otherwise undes.) —	
Antwerp, 3 cks.	
Boulogne, 53	
Ghent, 4 1 cs.	
Hamburg, 6 1	
Rotterdam, 16	
Dyestuffs (otherwise undescribed)	
Ghent, 1 ck	
Manure —	
Boulogne, 89 bgs.	
Bruges, 618	
Ghent, 300	
Pitch —	
Dunkirk, 300 t.	
Antwerp, 282	

GRIMSBY.

Week ending April 13th.

Ammonium Sulphate —	
Helsingborg, 10 t	
Chemicals (otherwise undescribed)	
Dieppe, 1 cs.	
Hamburg, 10 pkgs. 12 btl.	
Coal Products (otherwise undes.) —	
Dieppe, 40 cks.	
Hamburg, 1	
Rotterdam, 5	
Colours —	
Antwerp, 3 cs. 2 cks.	
Dieppe, 1 tin.	
Hamburg, 2	
Malmö, 24 dms.	

PRICES CURRENT.

WEDNESDAY, APRIL 24th.

PUBLISHED BY HENRY HODGKINSON AND CO., LTD., PORTLAND STREET, MANCHESTER.

The price in different localities may vary.

LIME		SODA	
Best (white)	per ton	Soda ash (brown)	per ton
Second (white)	per ton	Do. (grey)	per ton
Third (white)	per ton	Magnesium (ribbon and wire)	per oz.
Fourth (white)	per ton	Chloride (ex ship)	per ton
Fifth (white)	per ton	Carbonate	per cwt.
Sixth (white)	per ton	Hydrate	per ton
Seventh (white)	per ton	Sulphate (Epsom Salts)	per ton
Eighth (white)	per ton	Manganese, Sulphate	per ton
Ninth (white)	per ton	Borate	per cwt.
Tenth (white)	per ton	Ore, 70 %	per ton
Eleventh (white)	per ton	Medicated Spirit, 61° O.P.	per gallon
Twelfth (white)	per ton	Resin (Wood), Solvent	per gallon
Thirteenth (white)	per ton	Do. Miscible, 60° O.P.	per gallon
Fourteenth (white)	per ton		
Fifteenth (white)	per ton		
Sixteenth (white)	per ton		
Seventeenth (white)	per ton		
Eighteenth (white)	per ton		
Nineteenth (white)	per ton		
Twentieth (white)	per ton		
Twenty-first (white)	per ton		
Twenty-second (white)	per ton		
Twenty-third (white)	per ton		
Twenty-fourth (white)	per ton		
Twenty-fifth (white)	per ton		
Twenty-sixth (white)	per ton		
Twenty-seventh (white)	per ton		
Twenty-eighth (white)	per ton		
Twenty-ninth (white)	per ton		
Thirtieth (white)	per ton		
Thirty-first (white)	per ton		
Thirty-second (white)	per ton		
Thirty-third (white)	per ton		
Thirty-fourth (white)	per ton		
Thirty-fifth (white)	per ton		
Thirty-sixth (white)	per ton		
Thirty-seventh (white)	per ton		
Thirty-eighth (white)	per ton		
Thirty-ninth (white)	per ton		
Fortieth (white)	per ton		
Forty-first (white)	per ton		
Forty-second (white)	per ton		
Forty-third (white)	per ton		
Forty-fourth (white)	per ton		
Forty-fifth (white)	per ton		
Forty-sixth (white)	per ton		
Forty-seventh (white)	per ton		
Forty-eighth (white)	per ton		
Forty-ninth (white)	per ton		
Fiftieth (white)	per ton		
Fifty-first (white)	per ton		
Fifty-second (white)	per ton		
Fifty-third (white)	per ton		
Fifty-fourth (white)	per ton		
Fifty-fifth (white)	per ton		
Fifty-sixth (white)	per ton		
Fifty-seventh (white)	per ton		
Fifty-eighth (white)	per ton		
Fifty-ninth (white)	per ton		
Sixtieth (white)	per ton		
Sixty-first (white)	per ton		
Sixty-second (white)	per ton		
Sixty-third (white)	per ton		
Sixty-fourth (white)	per ton		
Sixty-fifth (white)	per ton		
Sixty-sixth (white)	per ton		
Sixty-seventh (white)	per ton		
Sixty-eighth (white)	per ton		
Sixty-ninth (white)	per ton		
Seventieth (white)	per ton		
Seventy-first (white)	per ton		
Seventy-second (white)	per ton		
Seventy-third (white)	per ton		
Seventy-fourth (white)	per ton		
Seventy-fifth (white)	per ton		
Seventy-sixth (white)	per ton		
Seventy-seventh (white)	per ton		
Seventy-eighth (white)	per ton		
Seventy-ninth (white)	per ton		
Eightieth (white)	per ton		
Eighty-first (white)	per ton		
Eighty-second (white)	per ton		
Eighty-third (white)	per ton		
Eighty-fourth (white)	per ton		
Eighty-fifth (white)	per ton		
Eighty-sixth (white)	per ton		
Eighty-seventh (white)	per ton		
Eighty-eighth (white)	per ton		
Eighty-ninth (white)	per ton		
Ninetieth (white)	per ton		
Ninety-first (white)	per ton		
Ninety-second (white)	per ton		
Ninety-third (white)	per ton		
Ninety-fourth (white)	per ton		
Ninety-fifth (white)	per ton		
Ninety-sixth (white)	per ton		
Ninety-seventh (white)	per ton		
Ninety-eighth (white)	per ton		
Ninety-ninth (white)	per ton		
Hundredth (white)	per ton		

THE CHEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

415.

SATURDAY, MAY 4, 1895.

Vol. XVI.

Contents.

	PAGE		PAGE
ics	285	Tar and Ammonia Products	291
ional Health Exhibition	286	Miscellaneous Chemical Market	291
ry Jottings	287	Report on Manure Material	291
in Petroleum	287	Liverpool Mineral Market	291
alkali and Bleach	287	The Metal Market	291
aracene	288	West of Scotland Chemicals	291
Oxidation of Terpenes	288	Tyne Chemical Report	292
dial Oils	288	Hull Paint, Oil, and Colour Report	292
Induction Coil	289	Liverpool Oil and Colour Market	292
Education in Lanca-	289	New Companies	292
panies	290	The Patent List	293
ers	290	Gazette Notices	293
ce	290	Imports	293
.....	290	Exports	296
.....	290	Prices Current	300

ADVERTISEMENTS.

ED No. 351 of *Chemical Trade Journal*,
ing issue of February 10th, 1894.—Address, "E," *Chemical Trade*
ce, Manchester.

ED by Advertiser Situation as Manager or
der Manager in Works. Sulphuric acid from brimstone and Pyrites,
ke, alkali, bleach, sulphate of copper.—Address, "W.G., 177," *Chemical*
al Office, Manchester.

Notices.

munications for the *Chemical Trade Journal* should be
and Cheques and Post Office Orders made payable to—

S BROS., 32, Blackfriars Street, MANCHESTER.

Our Registered Telegraphic Address is—
"Expert, Manchester."

ms of Subscription, commencing at any date, to the
Trade Journal,—payable in advance,—including postage
of the world, are as follows:—

ly (52 numbers) 12s. 6d.
-Yearly (26 numbers) 6s. 6d.
terly (13 numbers) 3s. 6d.

will oblige by making their remittances for subscriptions by
ost Office Order, crossed and payable to "Davis Bros."

reports, and correspondence on all matters of interest to the
and allied industries, home and foreign, are solicited.
ents should condense their matter as much as possible,
e side only of the paper, and in all cases give their names
ses, not necessarily for publication. Sketches should be
arate sheets.

Advertisements.

advertisements of Situations Vacant, Premises on Sale or To be Let
as Wants, and Specific Articles for Sale by Private Contract are
be *Chemical Trade Journal* at the following rates:—

10 Words and under 2s. 6d. per insertion.
Each additional 10 words 6s. 6d. "

vertisements, Announcements in the Directory Columns, and all Adver
t prepaid, are charged at the Tariff rates, which will be forwarded on

ements intended for insertion in the current week's issue
ch the office by **Wednesday morning** at the latest.

CURRENT TOPICS.

THE CHURCH RIVER POLLUTION INQUIRY.

THE inquiry which was held recently at Accrington by the
Local Government Board, at the instance of the Ribble
Joint Committee, concerning the pollution of the river
Hyndburn, by Messrs. Steiner and Co., proved to be a very
interesting case.

The fact of Messrs. Steiner and Co. being the only firm
carrying on their particular class of dyeing in England, makes
it obvious that extra care should be exercised to prevent
their being handicapped as compared with their competitors
in Scotland and Germany, where river pollution is not
receiving such active attention as in Lancashire and
Cheshire.

The Joint Committee showed pretty clearly, however, that
the effluents had been, and were, of a polluting nature, espe-
cially since the establishment of the yarn dyeing department,
about 2½ years ago. They further complained that the firm
had had as much time as anybody else, but done less. A
tank of 20,000 gallons capacity will not permit much clari-
fication of an effluent by sedimentation, after precipitation,
when 100,000 gallons a day have to be got through it.
Under the circumstances the Joint Committee would, doubt-
less, be justified in insisting on pumping or other means
being adopted to remove the effluent to a place where it
could be more efficiently treated.

In their defence, however, Messrs. Steiner and Co. raise a
rather nice but important point, which amounts to whether
it is possible for anyone to claim exemption from the charge
of polluting a river, if they are not turning water into the
river, dirtier than the river water itself.

In this particular instance it was shown that the water in
the river was better after leaving the works than on entering
them, so that owing to the bad state of the Hyndburn,
Messrs. Steiner's effluent apparently did not pollute, they
contending that in consequence they should not be unduly
hurried up until the river had been so improved that the
status was reversed, and their effluent shown to be worse
than the river water as they received it. It will be very
interesting to see how the Local Government Board look at
this point, since their decision must either harmonise with,
or be entirely opposed to it. There is, however, another way
of looking at it, and that is on the principle that two blacks
do not make a white. There is no doubt that the effluent
would pollute an ordinary river, and though it did not make
any appreciable difference to the Hyndburn, still it contained
polluting matter which helped to swell the sum total of the
pollution the river suffered. Taking this aspect, there can
be no getting away from the fact of pollution *per se*, though
the extent and importance of the pollution may afford ground
for discussion.

Parliamentary Jottings.

THE PATENT LAWS.

House of Commons, recently, Mr. A. Morton said: I beg to resident of the Board of Trade, in view of the fact that there out of this country 1,339,062 old and new patents up to 1st 1894, can he state whether there are abstract indexes of all nts complete and fully classified, available for the public to London, Manchester, Leeds, Glasgow, Dublin, or other ness centres; and whether, short of a costly trial at law, any atent under our present system of issue is definitely known to nd free from old matter from one or more of the foregoing

ryce: Printed weekly—and annual indexes of all British e regularly supplied to libraries in the cities referred to, and other business centres. It is well known that the grant of a ries with it no guarantee of validity.

orton: I beg to ask the President of the Board of Trade e is aware that the all round average lifetime of patents in ry for the year 1892 was only about four years, ten months, reeks; whether he will state what it was for the years 1893-4 ly, together with the number of patents voided for each year; er he will forewarn or safeguard the public from taking out der the belief that all patents live 14 years by instructing ents acting in connection with the Patent Office to state con- yearly on all their advertisements, books, or other publica- t the all round average lifetime of patents has been for the year.

yce: I am aware that the average lifetime of a patent in this about five years. In 1893-4 it was about four years and this The number of patents which lapsed in 1893 was 9,302, 94,925. The Board have no power to instruct members of sion of patent agents to make any statement on the subject. that as a rule inventors are aware that the life of a patent n the payment of renewal fees. There is a statement to this very patent issued.

ms asked the right hon. gentleman whether, considering the : which would result from the publication of that answer in r *Gazette* of the Board of Trade he would so publish it. rce said he would consider the question.

THE POSITION IN PETROLEUM.

THE STANDARD CO. EXPLAINS.

ollowing statement has been published on behalf of the well-wn Standard Oil Company:—"There is no 'deal' with the producers, and there is no effort to crush out competition at the consumption is greater than the production. The demand 10,000 barrels a day in excess of the output. There used to ntly outstanding Pipe Line certificates for 40,000,000 to o barrels of oil, whereas now there are less than 5,000,000. at which certificates are selling on the exchanges practically field price. Some months ago the Standard Company pay the certificate price, but it has been compelled to keep e behind it. If it did not do so the producers would turn their rtificates and sell them on the exchanges. The high price of imulate development work. There never was such activity ennsylvania field. Everybody is happy at the prospect of noney. There is a difference of opinion as to whether the hausted. The largest production is in West Virginia, which of as being in the Pennsylvania field. The best prospect of e in production is in West Virginia. Pennsylvania has been ll bored over. There is a good deal of the Ohio oil, but the ds only 33 per cent. of illuminating fluid, while the Penn- rude yields nearly 90 per cent. After it is refined the differ- ot be told between the two. In Europe there is an objection il, and we have never sent any of it over there. The Russian much like the Ohio oil. There is great waste in refining it. he waste, however, is utilised for lubricants and for fuel. ian oil has almost absorbed the markets east of the Red Sea. mpetes with the American oil in all the European markets. continue high unless there is an increase in the production hat anybody at present looks for. Current prices are the nce the Bradford field was struck. It was the striking of that h originally reduced the price of oil."

THE OTHER SIDE.

egard to the existence of any arrangement with Russian pro- r any attempt to make such an arrangement, the following is he best answer that can be given:—M. de Witte, Russian

Minister of Finance, has signified his disapproval of the scheme for uniting the interests of the Russian and American petroleum industries which was put forward by the Standard Oil Company.

During the period between April 1 and April 15, 22,121 tons of petroleum were exported from Russia to Europe and 2,073 tons to the East. The export of naphtha residuum and other naphtha products to Europe amounted to 1,623 tons.

In the city column of *To-Day*, the following extract from a correspondent's letter is given:—"In the course of communications with gentlemen in Austrian-Poland (Galicia), I have been and am daily asked to encourage British capitalists to invest in Galician petroleum. You know, no doubt, that almost the whole of Galicia is nothing else but a sponge saturated with petroleum, that several English and Canadian gentlemen have made vast fortunes in Galicia. But it seems that there is, even in London, a little ring, wrecking, or trying to wreck, every negotiation which aims at purchase or exploration of the Galician oil fields and paraffin wax (ozokerite) deposits. I have had an instance of this recently. For the last six or eight months I have been working through respectable agents in the City to find purchasers for the greatest paraffin and paraffin wax works in Galicia. Several times the negotiations were on the point of being concluded, when, for reasons quite unknown, one or other of the capitalists withdrew. The refinery is still in the market." The correspondent goes on to make it clear that "the reasons quite unknown" means what he describes "as the unscrupulous opposition of the petroleum ring."

FURTHER COMPETITION.

According to advice from Johannesburg, active steps are being taken to test the petroleum shales of South Africa. A syndicate of influential people has been formed in Kimberley for the purpose of thoroughly testing the probably oleaginous shales. The syndicate intends to drill to a depth, and, remembering that the previous efforts were more distinctly encouraging as the drill went deeper, there "seems a probability of reward if the members have patience and perseverance." The locality it is proposed to prospect has been kept a secret so far, but it cannot long remain one; it is "in all probability within the Cape Colony proper."

EXPORTS OF ALKALI AND BLEACH.

THE following figures, which are taken from the official foreign and colonial statistics of the United Kingdom, give the amount and value of alkali and bleaching materials shipped to the undermentioned countries during the month of March, 1895, as compared with the same month in 1894:—

ALKALI.				
Port.	1894.	1895.	1894.	1895.
	Cwts.	Cwts.	£	£
Russia	5,573	6,539	1,977	2,114
Sweden and Norway	10,196	10,577	2,682	2,191
Germany	9,750	3,801	3,149	1,133
Holland	7,899	11,510	2,102	1,903
France	5,019	3,691	1,901	1,230
Spain and Canaries	27,190	29,688	11,768	10,059
Italy	13,015	21,581	4,907	6,783
United States	266,723	369,174	64,014	79,394
Australasia	22,425	15,476	6,325	4,293
British North America ..	10,382	10,424	2,842	2,687
Other countries	80,109	81,487	27,329	24,325
Total	458,281	563,948	128,996	136,112

BLEACHING POWDER, ETC.				
Port.	1894.	1895.	1894.	1895.
	Cwts.	Cwts.	£	£
United States	70,370	72,232	28,123	26,091
Other countries	31,116	50,407	12,304	18,122
Total	101,486	122,639	40,427	44,213

THE ALUMINIUM SUPPLY CO.—Mr. W. S. Sample informs us that he has moved his offices from Patricroft to 38, Victoria-buildings, Manchester. In order to meet the growing demands for aluminium in its various forms, increased warehouse facilities have been provided, and larger quantities of aluminium will be kept in stock, not only in ingots, but also in sheets, wire, rods, tubes, ferro aluminium, etc. Castings of all forms, in either pure or hardened aluminium, will continue to be a specialty, and orders for these will receive prompt attention. The telegraphic address of the company is "Aluminium, Manchester."

TESTING ANTHRACENE.

BY H. BASSETT.

IN the course of an experimental inquiry relating to the testing of commercial anthracene, in which I have been engaged for some months past, with the view of arriving at an improved process, some variations in the results obtained seemed to indicate the existence of an unknown cause of uncertainty in the now universally employed method, namely, Meister Lucius, and Brining's test of October, 1876.

In this test no reference is made to the purity of the chromic acid used.

An examination of samples of crystallised chromic acid from different sources gave percentages from 87 down to 71! and showed, moreover, the presence of sulphuric acid in quantities of from 8 to 18 per cent! The gradual draining which would occur in a large bottle containing, say, ten or twelve pounds of chromic acid would obviously increase the percentage of sulphuric acid in the lowest portion, which would be very different in quality from that first taken out for use.

Under these circumstances it appeared very surprising that anything like concordant results in testing should be possible, while experience has shown a fair agreement to be the rule; but in the course of experiment this difficulty was in great measure explained; still, however, leaving no doubt that the variations in the quality of the chromic acid have caused the occasional discrepancies which could not be accounted for.

A series of comparative tests was therefore made with different samples of anthracene, using pure chromic acid, with and without the addition of sulphuric acid, but otherwise under precisely similar conditions. The table following is an example of the results obtained.

		1.	2.	3.	4.
		B quality.			A quality.
13 grams. chromic acid	.. ..	32.44	34.75	39.93	51.15
10 "	" "	33.98	36.34	41.73	51.53
10 "	" + 8 gms.				
sulphuric acid.. ..	.. ..	33.26	35.05	40.36	51.06
10 gms. chromic acid + 2.8 gms.					
sulphuric acid.. ..	.. ..	33.21	35.01	40.27	51.10

The points worthy of notice in the above are:—

- That a large deficiency in the amount of chromic acid gives, as might be expected, a considerably higher percentage of anthracene.
- That the presence of sulphuric acid appears to compensate to a great extent for the deficiency in the chromic acid, and this is doubtless the explanation of the fact before referred to as to the usually fair agreement of tests.
- That a considerable variation in the quantity of sulphuric acid has very little influence on the results.
- That a good & quality anthracene is only slightly affected by considerable variations in the method of testing.

This last point is confirmed by the results already obtained by my modified process, from which I anticipate good results, and which I hope to publish on the completion of experiments now in progress with a representative series of commercial samples.

THE AERIAL OXIDATION OF TERPENES AND ESSENTIAL OILS.

(Concluded from page 270.)

Experiment 3.—Having obtained a third supply of this substance from Mr. Woodcock, weighing 39 grams, it was digested with proof spirit for three hours, in a flask fitted with an inverted condenser. After settling the solution was decanted off, and the powder was again digested with four successive quantities of proof spirit. The powder was then collected and dried at 100° C. It now weighed about 36 grams. 10 grams of it were then digested with chloroform, as before, for two hours, and the solution was filtered, after which the insoluble portion was dried at 100° C., powdered, and again digested with chloroform. In this way about two-thirds of the powder was obtained in solution. A large excess of ether was then added, and the white precipitate thus obtained was collected, dried at 100° C., and analysed.

0.2837 gram gave 0.7906 gram CO₂ and 0.2260 gram H₂O.

	Per cent.	+ Atomic weights.	+ C = 10.
C	71.47	6.280	10.0
H	8.79	8.79	13.98
O	15.74	0.984	1.37

The remainder, after analysis, was once more dissolved in chloroform, time with comparative ease—reprecipitated with ether, dried and analysed.

0.2426 gram gave 0.6725 gram CO₂ and 0.1879 gram H₂O.

	Per cent.	+ Atomic weights.	+ C = 10.
C	71.50	6.30	10.0
H	8.60	8.60	13.65
O	15.90	0.987	1.37

The powder thus purified was almost perfectly white, and residue on ignition. The melting point was next determined, it was found that at 220° C., the powder began to stick to the capillary tube, thus showing that melting had commenced, it was not otherwise visible to the eye till the temperature reached 231° C., and it did not melt completely below 236° C.

Recently, I have myself prepared some of this insoluble by oxidising American turpentine with a current of air, and then using the oxidised oil to stand for some months, when a slimy deposit collected at the bottom of the jar. After purifying this, as before, washing with alcohol, and reprecipitating the chloroform with ether, it was analysed with the following results.

0.2812 gram gave 0.7900 gram CO₂ and 0.2192 gram H₂O.

	Per cent.	+ Atomic weights.	+ C = 10.
C	76.62	6.385	10.0
H	8.66	8.66	13.6
O	14.72	0.921	1.4

The remainder, after analysis, was purified by a second precipitate from chloroform, and again analysed.

0.3659 gram gave 1.0141 gram CO₂ and 0.2829 gram H₂O.

	Per cent.	+ Atomic weights.	+ C = 10.
C	75.59	6.299	10.0
H	8.59	8.59	13.5
O	15.82	0.989	1.3

As I have never heard of any such body having been obtained from the raw turpentine, I can only conclude that the substance is the result from the oxidation of a terpene, and I propose for the present to give it the formula C₂₀H₂₇O₃.

Summary.

On oxidising terpenes with air in the presence of water we obtain

The oxidised oil containing

Resinous body.	Volatile body.	Volatile body.
C ₁₀ H ₁₄ O ₂	C ₁₀ H ₁₆ O	C ₁₀ H ₁₆ O ₂

The aqueous fluid containing

Soluble camphor.	Thymol-like substance.	Peroxide of hydrogen.
C ₁₀ H ₁₆ O ₃	C ₁₀ H ₁₄ O	H ₂ O ₂

In addition, when American spirits of turpentine is employed, oxidised oil deposits upon exposure to light, the amorphous, insoluble compound C₂₀H₂₇O₃.

The following tables give at a glance the composition.

- Of the substance which is left upon evaporation of the oxidised oils as described in the foregoing pages.
- Of the body C₁₀H₁₆O₃, which passes into the aqueous solution (1) when the oils are oxidised in the presence of water when the oxidised oils are subsequently treated with water.
- Of the bodies C₁₀H₁₆O and C₁₀H₁₆O₂ obtained on distilling the oxidised Russian turpentine in a current of air.
- Of the body C₁₀H₁₄O, obtained on distilling the aqueous fluid above described.
- Of the amorphous body C₂₀H₂₇O₃, deposited from American turpentine.

TABLE (a).

Calculated composition of the body C ₁₀ H ₁₄ O ₂ .	Derived from Russian turpentine.					
C	72.04	71.84	71.15	71.15	71.49	71.33
H	9.17	8.74	8.58	9.20	9.04	8.96
O	18.79	19.43	20.32	17.65	17.47	17.11
Derived from Russian turpentine.						
C	71.28	71.06	70.70	70.36	71.78	71.98
H	8.65	9.04	8.90	8.78	9.26	8.77
O	20.07	19.90	20.40	21.02	19.02	19.23
Derived from American turpentine.						
C	72.77	71.76	70.45	71.34	71.35	
H	8.81	9.20	9.09	9.14	9.09	
O	18.42	20.14	18.45	19.72	18.58	
From French turpentine.			From camphor oil.			
C	72.86		71.99	71.01	71.77	
H	9.02		8.45	8.77	9.01	
O	18.32		19.56	17.52	18.22	
From Eucalyptus Globulus.			From Eucalyptus (leaves).			
C	74.26		75.04			
H	9.31		8.40			
O	16.01		13.35			

TABLE (b).

Calculated composition of the body C ₂₀ H ₂₇ O ₃ .	
C	65.91
H	8.62
O	16.20

(1.)									
From Russian turpentine.		From American turpentine.		From French turpentine.		From <i>Eucalyptus globulus</i> .			
65'16	65'11	64'91	65'11	63'91	64'94	66'73	66'73	8'77	24'50
8'48	8'77	8'78	8'77	8'20	9'00	8'77	8'77	8'77	8'77
26'36	26'12	26'31	26'12	27'89	26'06	24'50	24'50	24'50	24'50
(2.)									
From Russian turpentine.		From American turpentine.		From French turpentine.		From <i>Eucalyptus globulus</i> .			
65'26*	64'90†	66'22	65'45	66'30†	65'18	65'65	65'65	8'60	25'75
8'99	8'75	8'86	8'37	8'34	9'06	8'60	8'60	8'60	8'60
25'74	26'35	24'96	26'18	25'36	24'76	25'75	25'75	25'75	25'75
(3.)									
From Russian turpentine.		From American turpentine.		From French turpentine.		From <i>Eucalyptus globulus</i> .			
68'25	68'42	67'88	67'88	67'88	67'88	67'88	67'88	67'88	67'88
9'48	9'55	9'30	9'30	9'30	9'30	9'30	9'30	9'30	9'30
22'27	22'03	22'82	22'82	22'82	22'82	22'82	22'82	22'82	22'82

TABLE (c).

Calculated composition of the body		Found	
$C_{10}H_{16}O$			
C	78'96	78'45	78'28
H	10'52	10'54	10'50
O	10'52	11'01	11'22
Calculated composition of the body		Found	
$C_{10}H_{16}O_2$			
C	71'43	72'02	72'02
H	9'52	9'79	9'79
O	10'05	18'19	18'19

TABLE (d).

Calculated composition of the body		Found	
$C_{10}H_{14}O$			
C	80'00	78'28	79'09
H	9'33	9'42	9'33
O	10'67	12'30	11'57

ained by action of water upon oil previously oxidised in of water.

ained by action of water upon oil previously oxidised in absence

ained by action of water upon $C_{10}H_{14}O_3$, yielded by the ion of the oil resulting from the oxidation of oil in presence of

TABLE (e).

Calculated composition of the body		Found	
$C_{20}H_{27}O_3$			
76'19	76'75	76'58	74'34
8'57	8'94	9'04	8'65
15'24	14'31	14'37	16'81
		Found	
C	75'47	75'60	75'62
H	8'79	8'60	8'66
O	15'74	15'80	14'72

AN IMPROVED INDUCTION COIL.

By H. N. WARREN.

original construction of induction coils known as the continuous ind, constituting what is known as the secondary coil, has been superseded by what is termed the segment wind, differing both in its insulation, and also in its effects when compared with the mer system. The following description of a machine of this construction will afford a brief idea of the benefits derived over other systems, when every advantage is taken in manufacturing an article of this description to avoid, if possible, the use of impure elements.

In this case the primary core was prepared by precipitating pure iron, igniting, and reducing it in a current of hydrogen gas; and then fusing and forging the same.

The substance, 10lbs. of wire, about the thickness of a wax match and a half in length, was selected, a pure iron rod composed of the same substance also passing through the centre. This core was then covered with several layers of paraffined silk, over which was wound a very thick insulated copper wire, each layer being carefully insulated; the whole being enclosed, save the extremities, in a thick tube. Upon this was mounted the secondary, consisting of No. 22 double silk-covered wire; on the whole this may be

regarded as a thick wire, but the strength afforded, both as regards the spark obtained and also the amount of current required, was well merited.

The secondary was composed of 52 segments, separated from each other by mica plates, the whole being coated with paraffin to about two inches in depth, and further cased in ebonite. To the contact-breaker of the machine, in order to absorb the spark, 500 sheets of copper foil were connected, each being insulated by paraffined silk and protected in the usual manner. The machine, as thus constructed, required five Bunsen quart cells to urge it to its full power. The spark thus obtained, which was over 10 inches long, was the most intense I have ever seen. In some cases the noise of the sudden discharge was equivalent to the report of a rifle, affording a constant stream of thick fire resembling lightning.

The supply of ozone liberated was very considerable, almost immediately bleaching cotton fabrics when brought near the same in a moist condition. Two dozen large vacuum tubes, two feet long and upwards, were brilliantly lighted, and deal boards to the thickness of half an inch were readily pierced; almost every elementary substance was speedily volatilised when brought into contact with the spark, and their spectra thus revealed.

AGRICULTURAL EDUCATION IN LANCASHIRE.

A SCHEME of agricultural education has been issued by the Technical Instruction Committee of the Lancashire County Council and will be carried out at the farm of the Council at Hutton, near Preston, at the Harris Institute, Preston, and in various parts of the county. The conduct of the scheme is given to a Joint Committee—of which the Rev. L. C. Wood, vicar of Singleton, is chairman,—consisting of 13 representatives of the Technical Instruction Committee, four representatives of the Harris Institute, and six representatives of the Royal Lancashire Agricultural Society. The Dairy School has the first place in the scheme. In this school (which is located at the Hutton farm) a thorough training in the theory and practice of butter and cheese making is given to "residents of the administrative county" over 15 years of age whom the Joint Committee regard as suitable persons to receive such instruction. The pupils are boarded and lodged at the farm free of cost provided they remain for a period of not less than eight weeks and comply with certain conditions laid down by the Committee. The syllabus includes lectures by the resident and visiting staff on the general principles of dairy management and on all the processes connected with the production of milk, butter, and cheese. As the Joint Committee are anxious to encourage poultry keeping for table purposes and for egg production they have laid in a stock of specially selected fowls at the farm, and arrangements have been made for giving instruction in the modern methods of fattening poultry and in egg production. The various experiments to be made at the school are based upon Professor Long's report to the Committee. Arable experiments will be conducted on the growth of oats, clover, potatoes, mangolds, and swedes, to test the influence of various fertilisers on them under different conditions. Grass experiments will be carried out to test the influence of nitrogen in nitrate of soda, phosphoric acid in superphosphate and slag alone and in combination with each other, and also in combination with potash. The value of lime will also be investigated. Feeding experiments will be undertaken with both shorthorn and Jersey cows. Rations will be given to test the milk-producing properties of wheat, oats, decorticated cotton cake, bean meal, and other feeding stuffs. At the Harris Institute, Preston, a systematic course of instruction in agricultural chemistry, the principles and practice of agriculture, veterinary surgery, bookkeeping, and steam and mechanics will be given during the session commencing about the 1st of October, 1895, and ending about the first week in May, 1896. The object of this school of agriculture is to prepare youths for the practical work of a farmer's life by instructing them in the principles which underlie farming operations, and demonstrating, in the lecture-room and on the farm, modern and scientific methods of agriculture. The full course of instruction extends over two winters, the students being divided into three classes—a preparatory, a junior, and a senior class. The miscellaneous work which the Joint Committee carry on in the county includes lectures (arranged through local committees, agricultural societies, or farmers' associations) by the migratory staff of the Committee on a variety of agricultural subjects. A sum of £1,170. has been set apart to provide three senior scholarships of the annual value of £60. and seven junior scholarships of the annual value of £30. in agriculture and horticulture, each of which is tenable for a term not exceeding three years; and a further sum of £280. has been set aside to provide 28 exhibitions of the value of £10. each, tenable for one year, for proficiency in agriculture and horticulture. The examinations for these scholarships and exhibitions will be held during the week commencing the 17th day of June next, the last day of entry being the 11th May.

Exports of Chemicals

The following table shows the value of the principal chemicals exported from the United Kingdom in 1894, compared with the value in 1893. The figures are in millions of pounds sterling.

Chemical	1893	1894
Sulphuric acid	1.2	1.1
Soda ash	0.8	0.7
Potash	0.6	0.5
Ammonia	0.4	0.3
Hydrochloric acid	0.3	0.2
Nitric acid	0.2	0.1
Other chemicals	0.1	0.1
Total	3.6	3.0

The above figures show a decrease in the value of the principal chemicals exported from the United Kingdom in 1894, compared with 1893.

WPS FOR TRADERS.

The following table shows the value of the principal chemicals exported from the United Kingdom in 1894, compared with the value in 1893. The figures are in millions of pounds sterling.

The following table shows the value of the principal chemicals exported from the United Kingdom in 1894, compared with the value in 1893. The figures are in millions of pounds sterling.

Chemical	1893	1894
Sulphuric acid	1.2	1.1
Soda ash	0.8	0.7
Potash	0.6	0.5
Ammonia	0.4	0.3
Hydrochloric acid	0.3	0.2
Nitric acid	0.2	0.1
Other chemicals	0.1	0.1
Total	3.6	3.0

The above figures show a decrease in the value of the principal chemicals exported from the United Kingdom in 1894, compared with 1893.

Sulphuric acid, is also dutiable at 25% ad valorem. It is made from coal-tar benzoic acid and is exempted from duty under the 1894 tariff.

Sulphuric acid, for use as a manure, is now admitted free of duty. The duty formerly was 5 cents per kilogr.

Sulphuric acid, nitrate of soda, are now admitted free of duty.

Correspondence.

The Editor is not responsible for the opinions expressed by our correspondents.

REMARKABLE ELECTROLYTIC PHENOMENON

To the Editor of the Chemical Trade Journal.

I have read with considerable interest the article by Mr. Reed on electrolysis, more especially as I have met with similar results where electrolyzing fused chlorides of the alkalis.

I explain my result by accident. If when electrolyzing fused salts, using a carbon anode, the current is accidentally reversed, so that the carbon becomes negative, one finds that in a very few minutes the carbon is entirely eaten away. In the case of the fused alkali chlorides at a very low voltage, say, two or three, but that may be because the fused salts offer less resistance.

I have not tried the experiment in any other electrolytes, except fused metallic chlorides, but I have no doubt the results will be similar. I regret that in Mr. Reed's paper no explanation is given to account for his results. I explain my result by supposing that liberated alkaline metal, being volatile at the temperature of the electrolyte, causes a disruptive action on the cathode. I have noted this does not take place in electrolytes which deposit a non-volatile metal on the cathode.

Any further information from Mr. Reed would, I am sure, be of great interest to those engaged in electrolytic work.—Yours, etc.
London, April 29th, 1895. HUGH K. PICKARD, A.R.S.

Trade Notes.

CHROME LEAD DYEING A "DANGEROUS OCCUPATION."—The Factories and Workshop Act of 1891, the Home Secretary has issued the *London Gazette* that in his opinion processes in which a chromate of lead is used, or in which goods dyed with chrome are subjected to the process of mangle, winding, reeling or any other treatment are dangerous or injurious to health.

SECTION OF CHEMICAL INDUSTRY.—*London Section.*—The meeting of this Section, which will be held on Monday, May 14th, will be held on "The Use of Hot Air in Drying" by Mr. H. H. H. and "The Estimation of Alkaline Salts in Lye" by Mr. A. Cameron.

SECTION OF CHEMICAL INDUSTRY.—*Manchester Section.*—The meeting of this Section, held on Friday last, May 3rd, the following papers were read: "The deferred paper from last meeting by Mr. H. H. H. on the Pink Colouration of Cotton," "Notes on the Properties of Aniline Black on Cotton," "Notes on the Properties of Liquid Gas Driers," by T. Stenhouse, F.R.S., and "We read the 'Spectra of Argon and Neon' which he read a paper on the 'Vulcanisation of India Rubber II'."

SECTION OF CHEMICAL INDUSTRY.—*Liverpool Section.*—The meeting of this section was held on Wednesday, May 2nd, when Mr. H. H. H. gave a demonstration on "The Properties and Preparation of Nickel Carbonyl," and "Notes on the Properties of Salt Solutions" by Mr. Watson Smith, were read by Dr. H. H. H.

MANUFACTURE OF ICE BY AMMONIA REFRIGERATION.—This art is being attained by the Ice Manufacturing Company, which, by the introduction of the latest scientific processes, promises to revolutionize the local trade, and, in fact, to make ice an ordinary article of consumption, instead of a luxury. Mr. John Lowry, the engineer of the company, in the course of an extensive tour through the great centres of the industry, and returned with a knowledge of the leading improvements introduced into the manufacture, improvements are now to be seen in operation at the company's works in Blossom-street, Ancoats.

AT A CHEMICAL WORKS.—It is with regret we learn that the works of Mr. Josiah Hardman, at Milton, near Stoke-on-Trent, were on Monday night destroyed by fire. The damage is estimated at over £3,000.

INGENIERO ESPAÑOL.—This is the title of a new paper in Spanish devoted to the engineering trades. It deals with electrical engineering in particular. It is well got up, and promises to constitute a useful organ for the metal and machinery trades.

OLEUM LAMP FATALITIES.—While a married woman named Mary was putting her little son to bed in Belfast she accidentally overturned an oil lamp, setting the house on fire. Her screams brought the neighbours, who succeeded in extinguishing the fire, but not before both mother and child were dreadfully burned. The boy died in the Royal Hospital, and the doctors state that the woman cannot recover. Another fire occurred recently at 47, Royal-street, Lambeth, through a mineral lamp exploding. In endeavouring to subdue the flames Hugh Moody, aged 35, was so fearfully burned that he died in the hospital to which he was removed.

AT A RUBBER WORKS.—A fire occurred last week at the works of William Openshaw, rubber manufacturer, Holt Town, Manchester. The firemen from Pollard-street and Goulston-street attended, and once got three jets into operation, and soon afterwards they were followed by a detachment from the chief fire station, under the command of Superintendent Muir. Three additional jets were then got into operation, and in about three-quarters of an hour the fire was extinguished. Three of the four floors of the building, together with the contents, were seriously damaged by fire, while the basement floor was saved, but not so seriously, by water. The cause of the fire is not yet ascertained.

Market Reports.

TAR AND AMMONIA PRODUCTS.

Prices are dull, 90's being easier in price since last week. Carbolic acid firm, 60% crude having been advanced to 1s. 8d. per gallon, crystals 6½d. Crude naphtha is unaltered at 5d., but solvent at 1s. 1d. Anthracene and creosote are quiet, but steady. Naphthalene firm at 35s., f.o.b. East Coast.

Ammonia, though suffering from a severe decline in price, shows signs of more activity. There has been an improvement in Continental demand, and inquiries are moving forward.

However, show no disposition to quote ahead under the present state of affairs. London outside makes are quoted £9. 7s. 6d., Hull £9. 8s. 9d., and Leith £9. 7s. 6d. to 3d.

REPORT ON MANURE MATERIAL.

During the week a moderate amount of business has been passing, but declining prices, and only for prompt and early delivery. Forward position is neglected. Quotations for mineral phosphates are last reported, but these are something above buyers' idea of what we do not hear of any important transactions. Buyers hardly know what they will require for next season, and they are in no hurry to make further purchases. River Plate bones, late spring shipment at £4. 5s. per ton, but this is quite 2s. 6d. above what has been accepted, and £4. 2s. 6d. per ton is probably nearest value. For Kurrachee bones, for shipment, £4. 5s. per ton would now do. Bone meal is more plentiful on spot, and £4. 10s. per ton is accepted, ex quay. For summer shipment £4. 5s. per ton ex quay. Common grinding bones find a fair market at £4. to £4. 2s. 6d. ex quay Liverpool. Nitrate of soda continues to droop, and cannot at the close be put at over 8s. per cwt. for ordinary 8s. 1½d. for refined.

THE METAL MARKET.

DON, WEDNESDAY.—Pig iron, firm: Scotch warrants at 43s. 3d., Middlesbrough 35s. 2d. cash, and hematite at 43s. 7d. and 43s. 11½d. one month, closing with buyers at 43s. 9½d. cash, sellers ask 43s. 10d. Cleveland done at 35s. 5d. and 35s. 7d. cash, also at 35s. 7d. one month; closing with buyers at 35s. 7d. cash, sellers ask 35s. 7½d. Cumberland hematite done at 43s. 8d. and 43s. 11d. cash, also at 43s. 9d., and 44d. 3d. one month, closing with buyers at 43s. 1d. cash, sellers ask 44s. 3d. Middlesbrough hematite done at 43s. one month, closing with buyers at 42s. 9d. cash; sellers ask 42s. 10½d.

GLASGOW, WEDNESDAY.—Market strong, with large business. Scotch done at 43s. 5d., 43s. 7½d., 43s. 6½d., and 43s. 10d. cash, also at 43s. 7d. and 43s. 11½d. one month, closing with buyers at 43s. 9½d. cash, sellers ask 43s. 10d. Cleveland done at 35s. 5d. and 35s. 7d. cash, also at 35s. 7d. one month; closing with buyers at 35s. 7d. cash, sellers ask 35s. 7½d. Cumberland hematite done at 43s. 8d. and 43s. 11d. cash, also at 43s. 9d., and 44d. 3d. one month, closing with buyers at 43s. 1d. cash, sellers ask 44s. 3d. Middlesbrough hematite done at 43s. one month, closing with buyers at 42s. 9d. cash; sellers ask 42s. 10½d.

LIVERPOOL MINERAL MARKET.

Business still continues fair, and prices remain about the same. Manganese: There are but few arrivals to report, which have not materially affected the market. Ground manganese still continues in steady request at £6., £8., £10., and £12. 10s. per ton, according to quality. Manganiferous iron ore is unaltered at 15s. to 16s. per ton for Grecian and 16s. to 17s. 6d. per ton for Spanish, c.i.f., in cargoes. Bauxite: Very extensive inquiries are now in operation, for Irish Hill brand in particular, arising chiefly from the manufacture of aluminium metal therefrom; prices are, consequently, firm, with the probability of an advance, at 20s. per ton for first quality, 16s. per ton for second quality, and 12s. per ton for third quality, f.o.b. Chrome ore still continues in good demand, and prices are well maintained at 70s. per ton for 40% and 110s. to 115s. per ton for 50% ore; there have been only small arrivals which have gone direct into consumption. French chalk: The arrivals this week have all gone into consumption, and prices continue firm at 70s., 80s., 90s., and 110s. per ton for "Angel White" and "Gold Medal" qualities. Tungsten metal still continues steady at unaltered prices. Plumbago sells freely, the demand for foundry and lubricating qualities being well maintained at £5., £6., and £10. per ton, according to quality. Arsenic is still scarce. Barytes: Carbonate is easier at 60s. to 90s. per ton for fair to good quality; sulphate, lump, 40s. per ton; ground from 45s. to 70s. per ton. China clay: There is a fair inquiry for this at 22s. 6d., 30s., and 35s. per ton for prime qualities. Bog ore continues in steady demand at about 22s. 6d. per ton. Fluorspar: lump and ground is in fair demand at 40s., 80s., and 120s. per ton, according to quality. Feldspar is steady at 35s. to 40s. per ton. Cryolite still remains unaltered at £40. Oxide of uranium is steady at from 10s. 6d. to 11s. per lb.

MISCELLANEOUS CHEMICAL MARKET.

In the alkali trade values are fairly steady all round, and there is a fair amount of business doing, especially for export. Bleaching powder, for spot and forward delivery, is, if anything, rather firmer: £7. per ton softwoods, free on rails makers' works, and £7. 7s. 6d. to £7. 10s., f.o.b., for hardwoods. Chlorates unaltered: potash at 4½d. and soda at 6½d. per lb. Alkali, 58%, £2. 17s. 6d., bags, makers' works—no further reduction in this price being looked upon as probable, on the other hand no prospect of early advance. Bicarbonate is still held for £6. 10s. to £6. 12s. 6d., f.o.b. Soda crystals continue flat at 35s. to 37s. 6d., bags, f.o.r. Caustic soda in all positions is without further alteration, spot prices being f.o.b. Liverpool, 77%, £9. 7s. 6d.; 74%, £8. 7s. 6d.; 70%, £7. 10s.; 60%, £6. 10s.; cream, 60%, £6. 7s. 6d. nett per ton, 10-ton lots and upwards. Sulphur steady at £3. 12s. 6d., f.o.r. Sulphate of copper firm at £15. 10s. to £15. 15s., f.o.b. White powdered arsenic still very scarce at £14. 15s. nett per ton. Alum and sulphates of alumina are offering generally at low prices. Sulphate of iron in rather better demand, and higher prices obtainable. Potash, caustic and carbonate, is still scarce, and prices are firm. Yellow prussiate of potash continues to droop, values being 7¾d. to 8d. nett. Sulphocyanides also easier. Cyanides of potassium lower in price and in less demand. Carbolic acid crystals have been advanced to 6¾d. for 39/40%. Acetates of lime, brown and grey, are without improvement either in value or demand. All other acetates and acetic acid being in a similar position. In finer chemicals for manufacturing purposes, trade generally is reported unsatisfactory, even where prices are not notably affected.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

Sulphate of ammonia is to-day in a worse position than ever, and neither makers nor middlemen feel the slightest confidence in summing up the situation. The article was never so low down before, and appearances seem to indicate that it is to go still lower before the check comes. Dealers have been offered at £9. 7s. 6d., and have

declined investment at that, so much has confidence, as regards the future, been sapped. It is feared that sulphate, as a fertiliser, has somehow declined definitely in the favour of the agriculturists during the past 18 months. Stocks are heavy, and some of the makers want ready money badly. Nitrate of soda also is cheaper.

Report as to the market for general chemicals seems to indicate some slight movement in the direction of rather less of inactivity. There is a better inquiry, and prices hold pretty firmly. Chlorate of potash is a shade dearer; also sulphate of copper.

The position in mineral oils and solid paraffins is not materially changed. Makers hold for the higher prices in burning oil, but they are not selling much at that. A few of the old low-priced season contracts are still not quite exhausted and consumption is declining daily, with the advance of the season.

Chief prices current are:—Soda crystals, 35s. nett, Tyne; soda ash, 48/52°, 63. 12s. 6d. to 64. 5s. nett, Tyne; white alkali, 48/52°, 64. 10s. to 65. 5s. nett, Tyne; alum in lump, 65. 10s. nett, Glasgow; caustic soda, white, 74° 69, 70/72° 67. 15s., 60/62° 66. 15s., and cream 60/62° 66. 10s., all nett, Liverpool; bleaching powder, 66. 10s. to 67., nett, Tyne; saltcake, 17s. 6d.; borax, English refined, 62. 10s., and boracic acid, 63. 10s. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, 66. 10s., and 1-cwt. casks 66. 15s. nett, Liverpool; bichromate of potash, 4 1/4 d. nett, for Scotch and English deliveries (for export, 4 1/4 d. nett, f.o.b. Glasgow); bichromate of soda, 3 1/4 d. nett, for Scotch and English deliveries (for export, 3 1/4 d. nett, f.o.b. Glasgow); chlorate of potash, 4 1/4 d. less 5%, Liverpool; nitrate of soda, 8s. 4 1/2 d.; sulphate of ammonia, 69. 7s. 6d. to 69. 8s. 9d., prompt f.o.b. Leith; sal ammoniac, first and second white, 63. 9d. and 63. 7d. nett, any port, sulphate of copper, 61. 7s. 6d., less 5%, Liverpool; paraffin scale, hard 2 1/2 d.; and soft, 1 1/2 d. to 2 1/2 d. per lb.; paraffin wax 120° semi-refined, 2 1/2 d. to 2 3/4 d.; paraffin spirit (naphtha), 5d. to 6d. per gallon; paraffin oil (burning), No. 1, 7 1/2 d. and crystal 7 1/2 d. at works, for all buyers; ditto (lubricating) 86 1/2° 64. 5s.; 88 1/2° 64. 10s. to 65., and 89. 86 1/2° 65. to 65. 10s. Week's imports of sugar at Greenock were 29,000 bags best unrefined, 8,357 bags cane unrefined, and 7,335 baskets cane dry.

TYNE CHEMICAL REPORT.

TUESDAY.

There is perhaps a shade more business doing in chemicals, but there is no improvement to report in prices. Shipments, though somewhat larger, are still moderate. 70/72° caustic in fair demand at 63. 10s.; 70/72° 67. 15s. per ton. Sulphur scarce at 64. 5s. per ton. Soda crystals, locally, 66. 10s. 6d. per ton in casks, gross weight.

Bleaching powder, 66. 10s. per ton, nett; hard, 67. 10s. per ton, nett; caustic soda, 70/72°, 66. 10s. per ton, nett; do., 70°, 67. 15s. per ton, nett; recovered sulphur, 2 cwt. bags, 64. 5s. per ton, nett; soda ash, 48°, 63. 15s. per ton, nett; do., 52°, 64. 2s. 6d. per ton, nett; do., 50°, 64. 10s. per ton, nett; alkali, 30%, 62. 15s. per ton, nett; white alkali, 48°, 64. 10s. per ton, nett; do., 50°, 64. 15s. per ton, nett; do., 52°, 65. 5s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, 66. per ton, nett; do., 1 cwt. kegs, 66. 12s. 6d. per ton, nett; silicate of soda, 75° Tw., 62. 12s. 6d. per ton, nett; do., 100° Tw., 63. per ton, nett; do., 140° Tw., 63. 7s. 6d. per ton, nett; soda crystals, casks, 61. 10s. 6d. per ton, nett, gross weight; do., 2 cwt. bags, 61. 10s. 6d. per ton, nett; chlorate of potash, 5 1/4 d. per lb., less 6%; pearl hardening, 63. per ton, nett; pure white sulphate of alumina, 64. 2s. 6d. per ton, nett; blanc fixe, 67. 10s. per ton, nett; chloride of barium, 67. 10s. per ton, nett; carbonate of alumina, 62. 15s. per ton, nett; aluminate of soda, 63. 15s. per ton, nett; in 5 ton lots, 62. 10s. per ton, nett.

SALT.—South Durham salt is steady at 9s. to 9s. 6d. per ton, f.o.b. Tees.

COAL.—Trade is rather quiet here at present, but the expectations of increased shipments to the Baltic ports keep the market fairly steady. Best Northumbrian steam, 8s. 9d. to 9s. per ton; second qualities, 7s. 9d. to 8s. per ton; small steam, 4s. to 4s. 3d. per ton; gas coals, 6s. 6d. to 6s. 9d. per ton; household coals quiet, 10s. to 11s. per ton. Coke, 12s. 6d. to 14s. per ton.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—The demand continues good. The import of linseed during the week has been 13,310 qrs. from the River Plate, and linseed oil has declined 5s. per ton. The import of cottonseed has been 4,004 tons from Alexandria. The imports, compared up to date with the same period last year, have been:—Linseed, 184,320 qrs. against 1,890 qrs.; rapeseed, 32,580 qrs. against 42,357 qrs.; cottonseed, 76,124 tons against 95,706 tons; olive oil, 3,967 casks against 7,753 casks; rape oil, 3,900 casks against 3,051 casks; oil of 3,438 tons against 8,487 tons; tallow, 4,724 cwt. against 5,364

cwt.; turpentine, 4,248 barrels against 4,300 barrels. Prices in Linseed oil has declined 5s. per ton, closing quiet at 18s. naked, spot; May-Aug., quoted 19s., and Sept.-December, 18s. 7d. boiled and refined from 61. to 62. per ton extra. The export of the week has been 1,920 cwt. Refined cotton oil closes firm, buyers at 16s. 9d., naked, spot; May-Aug., 17s. to 17s. 3d.; Nov.-April 17s. 9d. is asked; casks 17s. 6d., and ordinary barrels 6d. per ton extra. Export of refined during the week has been 6 cwt. Turpentine 23s. 3d. per cwt., in barrels. Castor oil has a prospect of an advance, 2 1/2 d. per lb. for first pressure. Cod oil, to 61. 19 per ton. Boiled drying oil 62. per ton. Sod oil extra scarce, the supply having been bought up by Americans, at 61. 23 per ton. Soft soap 14s. 6d. per cwt. Wool washing oil, per ton.

CAKES.—Linseed cakes, quiet; 95% pure, 66. per ton; fine 65. 12s. 6d. to 65. 17s. 6d.; Germans, 65. 17s. 6d. Oil of 65. 2s. 6d. to 65. 5s. per ton. Cotton cakes are dearer, in sympathy with seed, but the demand is very quiet at the advance: best no 63. 12s. 6d.; seconds, 63. 7s. 6d. to 63. 10s. Rape cakes changed.

PAINTS.—Makers begin to feel the pressure now of the new demand. Prices are: White and red leads unchanged. Ready mixed paints 62. 24. per ton. Venetian red and ordinary coloured paints be bought from 62. 12. per ton. Dry colours unchanged. Imp black varnish 65. 10s. per ton.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY

OILS.—Lagos is very quiet and easy at 62. 17s. 6d. to 62. per ton. There is very little doing in other qualities. Olive oil the inquiry being fairly good. Linseed is steady, with a satisfied business doing in Liverpool makes at 20s. 6d. to 21s. 6d. per. Cottonseed is dull and rather easier, Liverpool refined being 18s. 3d. to 19s. per cwt.; American 18s. 3d. per cwt. Castor is steady, with a fairly good inquiry: Good seconds Calcutta are 2 1/2 d. to 2 3/4 d., and first pressure French 2 1/2 d. to 2 3/4 d. per lb. latter is inclined to weakness. There is no change to report in tal. Resin is rather quiet, but holders are firm. Spirits of turpentine steady at 23s. per cwt., with a fairly good inquiry. Petroleum steady: American, 8 1/2 d. to 10 1/2 d., according to quality, and refined 8d. per gallon.

COLOURS are steady, without alteration in prices. Ochres: Oxfordshire, common, 61. 10s., medium, 61. 12s., best, Derbyshire, common, 40s.; medium, 50s., best, 60s.; Welsh, 90s., seconds, 50s., and common, 18s.; Irish, Devonshire, 40 45s.; French, J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Um Turkish quiet; Devonshire, 50s. to 55s. White lead, 61. 16. Red unchanged. Venetian red, 66. to 67. 10. Cobalt: Prepared 9s. 9d.; black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2s. 6d. Oxide of iron: Common, 67.; medium, 61. 10.; finest, Zinc oxide, 62. 10s. to 62. 25.

New Companies.

Clarke's Ammonia Works, Ltd. CAPITAL, £800, in shares 61. each. This Company has been formed to carry on the business chemical manufacturers in all its branches with special attention ammonia compounds.

The Tannoch Chemical Company, Ltd. CAPITAL, £2,000 61. 10. shares. This Company has been formed to acquire as a concern, and carry on the Tannoch Chemical Company, now in liquidation.

Fuller, Forshaw and Co., Ltd.—CAPITAL £20,000, in 61. 10. shares. This company has been formed to trade as paper makers and merchants. The subscribers to the memorandum of association are:—W. Forshaw, 66, Fenchurch-street, E.C., paper merchant; W. L. 285, Upton-lane, Forest Gate, secretary; A. G. Harvey, 8, Over road, Brixton, stationer; Mrs. C. E. Fuller, Broomfield-road, Chelmsford; J. E. Fuller, 18, Eldon-street, E.C., merchant; W. F. On, Eldon-street, E.C., merchant; W. J. Hermges, 5, Fell-street, E. merchant.

Crood and Brown, Ltd.—CAPITAL, £20,000, in shares of 61. each. This company has been formed to acquire the business firm carried on by the late J. Crood and E. Brown, at Bridgewater, as trade as grinders and crushers of linseed, cottonseed, &c., oil manure merchants. The subscribers to the memorandum of association are:—J. Bradford, Penn House, Yeovil, merchant; J. W. Bradfield, Martock, merchant; W. T. Bradford, The Moorlands, 3

merchant; A. E. Bradford, Penn House, Veovil, clerk; H. P. n, King-street, Bridgwater, solicitor; J. W. Bryans Alexandra-Bridgwater, traveller; E. Brown, King-street, Bridgwater, mer-

st London Paper Mill Company, Ltd.—CAPITAL £25 000, in of £5. each. This company has been formed to carry on the ss of paper, board, and cardbox manufacturers. The subscribers memorandum of association are:—Joseph Russell, 5, The Mall, nersmith, engineer; Jas. Russell, 11, Freeland-road, Ealing, mith; J. A. Naylor, 15, Cromford-road, West-hill, S.W., er; W. J. Ellis, 2, Ursula-street, Battersea, foreman; J. H. way, 9, Shoreditch, E, clerk; J. N. Russell, St. Mary's-grove, ersbury, engineer; G. Caulfield, Stewart's-grove, Fulham-road, ecretary.

The Patent List.

is list is compiled from Official sources in the Manchester ical Laboratory, under the immediate supervision of e E. Davis and Alfred R. Davis, who report professionally the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

avage and Polluted Water Filter. J. Dunn. 7,566. April 16.
s of Nickel and Iron and Steel. J. Johnson. 7,575. April 16.
ation of Blast Furnace Gases. A. Walski. 7,606. April 16.
vements in Furnaces and Kilns. P. Kirkup and J. Hodgson. 7,608. ril 16.

Process of Refrigeration and Apparatus therefor. M. Wanner. 7,621 April 16.
Artificial Stone, etc. R. Walker. 7,622. April 16.
Manufacture of Artificial Fuel. L. G. Harris. 7,664. April 16.
Manufacture of Iron and Steel whereby Sulphur is Extracted. H. C. S. Dyer. 7,669. April 16.
Separating Dust, etc., from Air. J. A. Hart. 7,701. April 18.
Apparatus for the Production of Hydrogen. T. H. L. Bake and H. A. Leverett. 7,814. April 18.
Utilising Waste Iodine Still Liquor. A. A. Moffatt. 7,834. April 19.
Enamelling Metal. J. Cochran. 7,892. April 19.
Drying Slurry by the Waste Heat from Cement Kilns. W. Joy. 7,920. April 20.

Gazette Notices.

PARTNERSHIPS DISSOLVED.

D. BEAUMONT, J. BEAUMONT, A. BLACKBURN, and J. BLACKBURN, under the style of Beaumont and Co., Leymoor, Golcar, near Huddersfield, dyers.
F. MASON and G. BUTLER, oil and colour dealers, Derby, under the style of Mason and Butler.
C. TREVITHICK and H. MABBOTT, seed, manure, and general merchants, Penzance, under the style of Trevithick and Mabbott.

BANKRUPTCY ACTS, 1883 and 1890.

Receiving Order.

FERDINAND FANTA, Temple Chambers, Temple Avenue, E.C., and Effingham House, Arundel street, Strand W.C., consulting engineer.

Adjudication.

CARTWRIGHT, ZACHARIAH, Fenchurch-street, E.C., colour manufacturer.

IMPORTS OF CHEMICAL PRODUCTS

AT

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending April 20th.

Amide—
and, 5 pkgs. F. Boehm
and, 5 J. Barber & Co.

ate of Lime—
ates, 734 pkgs. Lister & Biggs
ce, 10 F. Smith

Acid—
and, 158 pkgs. A. & M
and, 90 Zimmermann
Phillips & Graves

ne—
and, 12 pkgs. A. & M. Zimmermann
and, 10 R. W. Greeff
& Co.

ce, 2 W. G. Blagden
and, 25 pkgs. H. Wallace
& Co.

inium—
um, £622 Major & Field
any, 80 C. Tennant,
Sons & Co.

onium Chloride—
and, 26 pkgs. H. Lorenz

ne—
and, 2 pkgs. G. Rahn & Co.
3 L. C. & D. Rly.

ony—
castle, N. S. W., 55 t. Vivian,
Younger & Co.

ony Ore—
ey, 7 t. Bk. of N. S. W.

tos—
any, £14 Craven & Co.
400 Baynham & Co.
205 Bender & Martiny
and, 30 W. H. Carey
& Sons

da, 30 G. Rahn & Co.
13 W. Byford

tes—
um, 6 cks. Leach & Co.
and, 48 W. Taylor & Co.
46 Hemingway & Co.
111 T. & W. Farmiloe
any, 136 Cotton Powder Co.
and, 72 Magee, Taylor & Co.
um, 21 J. L. Lyon & Co.
115 O'Hara & Hoar
and, 17 J. L. Lyon & Co.

Binitrobenzol—
Holland, 6 pkgs. J. Owen

Bromine—
Germany, 37 pkgs. A. & M. Zimmermann

Bromine and Bromide of Iron—
Germany, 32 pkgs. A. & M. Zimmermann

Camphor—
China, 327 pkgs. R. Warner & Co.
Egypt, 1 Pitt & Scott

Caoutchouc—
Germany, 9 c. Prop. Bull Wf.
Trinidad, 6 Colonial Co., Ltd.
Madagascar, 37 L. & I. D. Jt. Co.
Zanzibar, 33
" 35
Arbuthnot,
Ewart & Co.
Cape, 17 Hammond & Co.
E. Indies, 213 G. Ward & Sons
Madagascar, 62 Kleinwort,
Sons & Co.
" 62 Blyth, Green & Co.
Aden, 35 Wallace Brs
" 20 Anderson, Weber
& Smith

Germany, 2 Craven & Co.
E. Indies, 20 c. Ralli Brs.
" 140 Huttenbach & Co.

Castor Oil—
France, 52 brls. J. T. Morton
Italy, 30 cs. Hodgkinsons & Co.
France, 80 F. V. Smythe & Co.
" 20 Snowden, Sons & Co.
E. Indies, 250 cs. L. & I. D. Jt. Co.
" 250 Cayzer, Irvine
& Co.

Caustic Potash—
France, 100 c. A. J. Smith
Holland, 197 J. M. Steel & Co.

Caustic Soda—
Holland, 100 c. Beresford & Co.

Chemicals (otherwise undescribed)
U. States, 100 pkgs. Anderson, Weber
& Smith

Holland, 28 J. Barber & Co.
Germany, 40 T. H. Lee
" 21 L. & I. D. Jt. Co.
" 1 Craven & Co.
" 81 A. & M. Zimmermann
& Sons

Belgium, 2 Phillips & Graves
7 O. Scholzig
18 T. Palmer
Holland, 21 pkgs. F. Boehm
Belgium, 13 A. H. Lee
Germany, 13 A. Willcox

Cream of Tartar—
France, 12 pkgs. B. & F. Wf. Co.
" 20 W. C. Bacon & Co.

Spain, 35
Italy, 16 Howard & Sons
Holland, 46 Kirkpatrick & Co.
France, 2 Ldn. & W. Eng.
Yeast Co.

" 10 F. C. Devon & Co.

Dext. line—
Germany, 50 pkgs. M. D. Co.
France, 30 C. A. Comyn

Dyestuffs—
Annatto
E. Indies, 12 pkgs. G. & H. Green

Argols
Italy, 18 pkgs. Thames S. T. &
L. Co. Ltd.
" 1,520 B. Jacob & Sons

" 60 pks. Anderson, Weber
& Smith

E. Indies, 250 Henderson Brs.
Rangoon, 750 T. Simpson
E. Indies, 400 pkgs. Anderson,
Weber & Smith

Divi Divi
E. Indies, 8 pkgs. Lewis & Peat
" 190 Culverwell
Brooks & Co.

Extracts
Germany, 9 pkgs. 1 ck. T. H. Lee
France, 25 Beresford & Co.
U. States, 53 W. Burton &
Sons

France, 60 Escombe Brs. & Co.
Denmark, 2 cks. Tegner,
Price & Co.

France, 112 Chmbln.'s Wf.,
Ld.

Holland, 6 Phillips & Graves
Belgium, 34 T. H. Lee
Canada, 80 A. J. Humphrey

Gambler
E. Indies, 1, 381 pkgs. G. Ward
& Sons
" 240 J. Greig
" 933 Brandiss,
Goldschmidt & Co.
Horsley, Kibble
& Co.

" 254 E. Boustead & Co.
" 477 R. & J. Henderson
" 1,337 W. Balchin
" 694 L. & I. D. Jt. Co.
" 260 Brinkmann & Co.
" 717 Beresford & Co.

Indigo
E. Indies, 76 chts. Stansbury & Co.

" 1 P. & O. Co.
" 63 H. J. Perlbach
& Co.

" 11 Walker, Munsie
& Co.

" 143 L. & I. D. Jt. Co.
" 48 F. Claydon & Co.
" 11 Langstaff & Co.
" 98 J. Owen
" 16 Parsons & Keith
" 74 pkgs. Ross &
Deering

" 52 Croysdale & Co.
" 5 Young, Sargent
& Co.

" 75 Parry & Co.
" 26 R. Von Glehn &
Sons

" 13 Arbuthnot, Latham
& Co.

" 87 Park, Macfadyen
& Co.

" 32 Elkan & Co.
" 10 Langstaff & Co.
" 11 Page, Son & Co.

Myrabolams
E. Indies, 2,390 pkgs. F. Claydon
& Co.

Shumac
Italy, 750 pkgs. Beresford & Co.
" 250 J. E. Scott

Tanner's Bark
Adelaide, 110 t. Beresford & Co.
Auckland, 6
U. States, 13 H. Johnson & Sons
Natal, 49 Dyster, Nalder & Co.

valonia
A. Turkey, 25 c. M. D. Co.
Greece, 90 t. Hicks, Nash & Co.
A. Turkey, 45 Hoare, Wilson & Co.
" 117 C. Scheeps & Co.
" 50 Adam Brs.

Farina—
Germany, 100 pkgs. Seaward Brs.
Holland, 200 R. G. Hall & Co.
" 50 T. H. Lee
" 50 J. Knill & Co.

French Chalk—
Austria, £50 Stobbs, Wilson, & Co.

Glucose—
U. States, 500 pkgs. 498 c. Fuerst Brs.
" 458 2,522 c. T. M. Duche
& Sons

" 250 250 Beck & Pollitzer
" 100 609 Deering &
Robottom

Germany, 25 202
" 100 585 Ohlenschlager
Brs

U. States, 1,000	1,000	Barrett, Tagant, & Co.	"	56	P. Hecker & Co.	Albumen—	Aoliki,	112 t. 300
"	50	Page, Son, & East	"	40	J. Hall & Son	Naples,	Farina—	
"	4,500	R. G. Hall & Co.	Soda—		H. Lambert	Ammonium Chloride—	Fiume,	220 bgs. 190 lbs.
"	700	I. Suto & Co.	Germany, 159 c.		H. Lorenz	Hamburg,	Trieste,	200
Germany, 13	105	J. Newcomb	France, 28 pkgs.		S. F. Waters & Co.	"	French Chalk—	
Infusorial Earth—			"			Antofagasta,	Messina,	100 bgs.
Germany, 415		T. H. Lee	Starch—			"	Gelatine—	
Lead Acetate—			Holland, 720 pkgs.		Little & Johnston	"	Rouen,	3 cks.
Holland, 6 pkgs.		B. & F. W. Co.	U. States, 190		Beck & Pollitzer	"	Glucose—	
Manganese Ore—			Germany, 2,117		Horne & Co.	"	New York,	250 bbs.
Germany, 6 t.		C. Hof & Co.	Holland, 60		J. Barber & Co.	"	Baltimore,	150
Manure—			Belgium, 40			"	Boston,	50
Belgium, 50 t.		Anglo-Cont. G. Wks.	"		H. Johnson & Sons	Barytes—	Glue—	
Peru, 3,107		F. W. Berk & Co., Ltd.	Holland, 222		F. Claydon & Co.	Rouen,	New York,	1 bel. T. Rain
Germany, 85		F. W. Berk & Co., Ltd.	Austria, 100		Prop. Scott's Wf.	Antwerp,	Rouen,	10 cks.
Belgium, 15		A. Hunter & Co.	Belgium, 40		Phillips & Graves	Bone Meal—	Rotterdam,	4 2 cks. 200 lbs.
E. Indies, 450		F. J. Cornwell, Son, & Co.	Austria, 50		R. G. Hall & Co.	Bombay,	Fiume,	200
"	150	H. & E. Albe	Holland, 277		Leach & Co.	Rangoon,	Guano—	
Belgium, 45		H. & E. Albe	"		J. Barber & Co.	Leghorn,	Chinca Island,	1,345 t.
Sydney, 875		A. Hunter & Co.	Belgium, 120		Magee, Taylor, & Co.	"		N. W.
Methyl Alcohol—			France, 100		E. & T. Pink	Borate—		
U. States, 100 bbs.		J. Kertell	U. States, 250		G. Rahn & Co.	Antofagasta,		
Holland, 100 crys.		Lister & Biggs	"		Sawyer, Sons, & Co.	Antofagasta,		
Germany, 10 dms.		L. & I. D. Jt. Co.	"		T. H. Lee	Borate of Lime—		
Belgium, 4		H. Lorenz	"		C. Tennant, Sons, & Co.	Antofagasta,		
Mica—			"		R. G. Hall & Co.	Borate of Manganese—		
E. Indies, 1,000		Blyth, Greene, & Co.	Stearine—			Bremen,		
"	251	Henderson Bros.	Belgium, 63 bgs.		C. S. Lovell	Calced Magnesia—		
"	750	W. M. Smith & Sons	France, 100		Walbaum & Tosetti	Malta,		
"	110	A. Geere & Co.	Germany, 5 cks.		Langstaff, & Co.	637 bgs.		
"	2,252	J. Mitchell	Belgium, 50 bgs.		H. Hill & Sons	Carbon Black—		
Molasses—			France, 100		"	New York,		
W. Indies, 14 cks. 140 c.		Middleton's Wf. Co.	Sulphur—			"		
Sweden, 23		R. G. Hall & Co.	Italy, 15 t.		F. Smith	Castor Oil—		
W. Indies, 5		L. & I. D. Jt. Co.	"		A. Hunter & Co.	Leghorn,		
New York, 300		L. Suto & Co.	"		W. C. Bacon & Co.	"		
Murex—			Talc—			Marseilles,		
Germany, 8 cks.		H. Lambert	France, 480		G. G. Blackwell, Son, & Co.	Chemicals (otherwise undescribed)		
Ochre—			Tartaric Acid—			Hamburg,		
France, 203 cks.		W. Harrison & Co.	Holland, 5 pkgs.		Kirkpatrick & Co.	Philadelphia,		
Belgium, 5		Phillips & Graves	"		F. C. Devon & Co.	Chrome Ore—		
Paraffin Wax—			"		H. & F. Wf. Co.	Portland, M.,		
U. States, 4,000 lbs.		Anglo-American Oil Co., Ltd.	Tin Oxide—			Hamburg,		
"	300 cks.	Williams, Torrey & Co.	Germany, 8 cks.		H. Lambert	"		
"	275 bbs.	Merisant Bros.	Turpentine—			Colours—		
Phosphate—			N. Russia, 52 bbs.		W. Caudery & Co.	Hamburg,		
Belgium, 50 t.		J. Giblin & Co.	"		F. & S. Chiesman & Co.	Antwerp,		
"	100	Fox, Roy, & Co.	Ultramarine—			"		
"	30	H. & E. Albert	Holland, 20 pkgs.		Thames S. T. & L. Co., Ltd.	Copper Sulphate—		
France, 242		Anglo-Cont. G. Wks.	"		Jonas & Co.	Venice,		
Pitch—			"		Phillips & Graves	Cottonseed Oil—		
Holland, 5 cks.		T. H. Lee	White Lead—		Hernu,	New York,		
U. States, 77 bbs.		Watts & Co.	Holland, 35 cks.		Peron, & Co.	"		
Holland, 3		Alday, Abbey, & Co.	Germany, 7		Haefner, Hilpert, & Co.	Dextrine—		
Plumbago—			"			Stettin,		
Ceylon, 33 bbs.		Wrightson & Son	Turpentine—			"		
Germany, 70		Deulson & Co.	N. Russia, 52 bbs.		W. Caudery & Co.	Dyestuffs—		
Ceylon, 35		B. & F. Wf. Co.	"		F. & S. Chiesman & Co.	Aizarrobia		
"	35	R. G. Hall & Co.	Ultramarine—			Huasco,		
"	183	J. Threlker, Son, & Co.	Holland, 20 pkgs.		Thames S. T. & L. Co., Ltd.	Totoralillo,		
Potassium Bicarbonate—			"		Jonas & Co.	"		
Holland, 80 c.		A. & M. Zimmermann	Wood Pulp—		Phillips & Graves	Annatto		
Potassium Carbonate—			Holland, 1,057 pkgs.		Hernu,	Bordeaux,		
Holland, 100 c.		J. Owen	Sweden, 60		Peron, & Co.	Cutch,		
Germany, 100		F. J. Patz & Co.	"		Haefner, Hilpert, & Co.	Genoa,		
France, 200		Charles & Fox	White Lead—			Rangoon,		
Holland, 85		A. J. Luke & Co.	Germany, 4		Spica Bros. & Co.	"		
France, 100		J. A. Reid	"		W. H. Garey & Sons	Diyl Diyl		
Potassium Oxymuriate—			"		Elkan & Co.	Hamburg,		
Sweden, 100 pkgs.		G. Boor & Co.	Wood Pulp—		Steinhilf, Sons, & Co.	Extract		
Pumice Stone—			Holland, 20 pkgs.		Perkins & Homer	Fiume,		
Italy, 122 t.		Seaward Bros.	"		Burrell & Co.	"		
"	5	Fellows,	White Lead—		H. Lambert	Bordeaux,		
"	4	Merton, & Co.	Holland, 35 cks.		J. L. Lyon & Co.	Genoa,		
"	4	H. B. Adler & Co.	Germany, 245		Perkins & Homer	"		
Quicksilver—			"			Pumice Stone—		
Holland, 15 bbs.		H. Bath & Son	Wood Pulp—			Leghorn,		
Rosin—			Holland, 1,057 pkgs.			Messina,		
Holland, 15 bbs.		Phillips & Graves	Sweden, 60			"		
Salicylates—			"			Pyrates—		
Holland, 8 pkgs.		J. Barber & Co.	White Lead—			Huelva,		
Germany, 50 bbs.		C. Wimble & Co.	Holland, 35 cks.			Wilmington,		
Holland, 20		H. Johnson & Sons	Germany, 245			Charles & S. C.		
E. Indies, 574		Lucas & Spencer's Wf., Ltd.	"			Saltpetre—		
Germany, 24 cks.		T. H. Lee	Wood Pulp—			Hamburg,		
"	24	Petri Bros.	Holland, 300 cks.			"		
			Zinc Oxide—			Soap—		
			Belgium, 30 bbs.			Leghorn,		
			U. States, 100			"		
			Holland, 300 cks.			Naples,		
			LIVERPOOL.			Bari,		
			Week ending April 18th.			Philadelphia,		
			Acetate of Lime—			Marseilles,		
			Nantes, 150 bbs.			Soapstone—		
						Trieste,		
						Genoa,		
						Sodium Chromate—		
						Rotterdam,		
						Sodium Nitrate—		
						Iquique,		
						Starch—		
						New York,		
						Baltimore,		
						Rotterdam,		
						Hamburg,		
						Antwerp,		

ne—	
dam,	25 bls.
rp,	13 bgs.
ir—	
a,	1 cs. 241 bgs. 67 brls. 200 cks.
	10 brls. A. Kinder & Co.
aux.	17 cks.
ic Acid—	
aux,	6 cks.
dam,	4
e—	
elphia	645 brls.
arine—	
urg,	4 cks.
dam,	4
h—	
	7 brls. 12 cs. W. H. Staynes & Smith
rp,	1 ck. J. T. Fletcher & Co.
Salt—	
rk,	1,116 bgs.
urg,	1,016
Lead—	
dam,	4 cks.
rp,	31
Pulp—	
dam,	204 bls. 160 pkgs.
Oxide—	
York,	50 brls.
dam,	50 50 cks
rp,	50
White—	
dam,	50 cks.

MANCHESTER.

Week ending April 20th.	
Acid—	
dam,	4 cks.
rp,	1 cs.
ony Salt—	
urg,	3 cks.
ide Oil—	
dam,	10 cks.
os—	
dam,	5 bls.
es—	
m,	23 cks. Wonkimson & Co.
dam,	39 150 bgs.
rp,	50
als (otherwise undescribed)	
dam,	3 cks.
il—	
n's, N.S.,	101 cks. J. J. Langley
	32 Job Bros.
rdam,	15 cks. 28 cs. 29 brls.
urg,	2
rp,	43
r Sulphate—	
	3 brls.
uffs—	
arine	8 cks. 1 cs.
tracts	
ix,	160 cks. Boutcher, Bacon, & Co.
lgo	
rdam,	4 chts.
onia	
thonise,	167½ t.
a—	
urg,	50 bgs.
rp,	5
rdam,	140 bgs.
s,	7 cs. 38 cks. 20 bls. 1 bdl.
Acetate—	
dam,	6 cs.
tone—	
rp,	1 cs
rge—	
rdam,	17 cks.
m—	
rp,	2 cks.
hol—	
rdam,	4 cks.
rdam,	25 cks.

Potash—	
Rotterdam,	10 dms.
Starch—	
Hamburg,	136 cs.
Antwerp,	239
Tartar—	
Rotterdam,	10 cks.
Tartar Emetic—	
Hamburg,	10 cks.
Tartaric Acid—	
Rotterdam,	16 cs. 54 cks.
Ultramarine—	
Hamburg,	3 cs. 4 cks.
Varnish—	
Antwerp,	1 ck.
White Lead—	
Rotterdam,	13 cks.
Wood Pulp—	
Halifax,	17,135 bdl. Chadwick & Taylor
St John's, N.S.,	413
Sannesund,	3,943 bls. 55 fthms.
Christiania,	4,271
Rotterdam,	102 cs.
Zinc Oxide—	
Rotterdam,	50 brls.
Zinc White—	
Rotterdam,	15 cks

HULL.

Week ending April 20th.	
Acetate—	
New York,	1,566 bgs. Wilson, Sons, & Co., Ld.
Acid—	
Rotterdam,	10 balloons W. & C. L. Ringrose
Bari,	53 cks. Wilson, Sons, & Co., Ld.
Alum—	
Rotterdam,	38 cks. W. & C. L. Ringrose
Barytes—	
Rotterdam,	97 cks. W. & C. L. Ringrose
Castor Oil—	
Antwerp,	12 brls. Bailey & Leatham
Chemicals (otherwise undescribed)	
Rotterdam,	1 ck. W. & C. L. Ringrose
Stettin,	4 cks. Wilson, Sons, & Co., Ld.
Hamburg,	32 pks. "
Trieste,	40 4 brls. "
Rotterdam,	40 "
Bremen,	3 cs. Veltmann & Co.
Cod Oil—	
Christiansund,	1 brl. Wilson, Sons, & Co., Ld.
Aalesund,	15 "
Bergen,	20 "
Colours—	
Rotterdam,	4 cks. Wilson, Sons, & Co., Ld.
New York,	4 brls. "
Hamburg,	5 cs. G. Malcolm & Son
Ghent,	2 brls. Wilson, Sons, & Co., Ld.
Rotterdam,	9 cks. 1 bx Hutchinson & Son
	2 kgs. J. Good & Sons
Hamburg,	1 ck. Bailey & Leatham
Rotterdam,	63 98 pks. 1 cs W. & C. L. Ringrose
Bremen,	8 1 cs. Veltmann & Co.
Antwerp,	24 1 brl. Wilson, Sons, & Co., Ld.
Cream of Tartar—	
Rotterdam,	2 cks. W. & C. L. Ringrose
Dextrine—	
Stettin,	200 bgs. Wilson, Sons, & Co., Ld.
Dyestuffs—	
Alizarine	
Rotterdam,	16 brls. Hutchinson & Son
Rotterdam,	88 pks. 39 cks. W. & C. L. Ringrose
Gambler	
Hamburg,	5 pks. Wilson, Sons, & Co., Ld.
Sumac	
Palermo,	100 bgs. Wilson, Sons, & Co., Ld.

Farina—	
Danzig,	100 bgs.
Harlingen,	50
Stettin,	100 Wilson, Sons, & Co., Ld.
Ghent,	163 cs. "
Glucose—	
Rotterdam,	60 bgs. Hutchinson & Son
Stettin,	2 cks. Wilson, Sons, & Co., Ld.
New York,	75 brls. "
Glue—	
Hamburg,	40 bgs. Wilson, Sons, & Co., Ld.
Rouen,	4 cks. 35 cs. Rawson & Robinson
Christiansund,	5 Wilson, Sons, & Co., Ld.
Rotterdam,	7 cs. W. & C. L. Ringrose
Guano—	
Christiansund,	20 bgs. Wilson, Sons, & Co., Ld.
Lead Acetate—	
Stettin,	56 brls. Wilson, Sons, & Co., Ld.
Manure—	
Rotterdam,	10 cks. W. & C. L. Ringrose
Paint—	
New York,	40 cs. Wilson, Sons, & Co., Ld.
Phosphate—	
Ghent,	1,510 bgs. Wilson, Sons, & Co., Ld.
Phosphate Rock—	
Bona,	500 t. Hammond, Emes, & Co.
Pitch—	
Rotterdam,	30 cks. W. & C. L. Ringrose
	50 Hutchinson & Son
Potash—	
Rotterdam,	6 cks. W. & C. L. Ringrose
Dunkirk,	17 Wilson, Sons, & Co., Ld.
Antwerp,	40 pks. 25 dms. "
Pumice Stone—	
Messina,	145 pkgs. 22 cs. Wilson, Sons, & Co., Ld.
Soap—	
Rotterdam,	6 cs. W. & C. L. Ringrose
Bari,	102 Wilson, Sons, & Co., Ld.
Soda—	
Rotterdam,	1 ck. W. & C. L. Ringrose
Sodium—	
Stettin,	100 cks. Wilson, Sons, & Co., Ld.
Sodium Nitrate—	
Iquique,	13,743 bgs.
Starch—	
Rotterdam,	44 cs. Hutchinson & Son
Antwerp,	200 Bailey & Leatham
Bremen,	2 328 Veltmann & Co.
Stearine—	
Antwerp,	171 bgs.
Sulphate—	
Drontheim,	1 b-l. Wilson, Sons, & Co., Ld.
Tallow—	
Hango,	19 cks. J. Good & Sons
Tartaric Acid—	
Rotterdam,	2 cks. W. & C. L. Ringrose
Treacle—	
New York,	550 cks. Wilson, Sons, & Co., Ld.
	50 brls.
Ultramarine—	
Rotterdam,	11 cks. 11 pks. W. & C. L. Ringrose
Bremen,	8 Hutchinson & Son
Waste Salt—	
Hamburg,	1 ck.
White Lead—	
Rotterdam,	146 cks. W. & C. L. Ringrose
Antwerp,	14 Bailey & Leatham

Wood Pulp—	
Hango,	136 bls. J. Good & Sons
"	163 Furley & Co.
"	50
Zinc Oxide—	
Antwerp,	10 brls. Bailey & Leatham

GLASGOW.

Week ending April 25th.

Acetate of Lime—	
New York,	360 bgs.
Acetic Acid—	
Gothenburg,	2 chys.
Asbestos—	
Boston,	20 bgs.
Bari n Sulphate—	
Antwerp,	350 bgs. 22 cks.
Castor Oil—	
Antwerp,	193 cks.
Caustic Potash—	
Fiume,	37 cks. Bryce & Rumpff
Chrome Ore—	
Macri,	2,030 t. Stevenson, Carlile & Co.
Cod Oil—	
St John's, N.F.,	£21 cks. Walter Thorburn
Hamburg,	2 cks.
Cottonseed Oil—	
New York,	50 brls.
Dyestuffs—	
Alizarine	
Rotterdam,	19 brls. J. Rankine & Son
Annatto	
Bordeaux,	3 cks.
Argols	
Bordeaux,	66 cks.
Extracts	
Fiume,	100 brls.
Antwerp,	2 cks.
Valonia	
Smyrna,	600 t. Martin & Miller
"	200 344 bgs.
Farina—	
Stettin,	750 bgs.
French Chalk—	
Fiume,	200 bgs. P M'Intosh & Sons
Glucose—	
New York,	100 brls.
Glue—	
Fiume,	100 bls.
New York,	5 brls.
Rotterdam,	5 bgs. 4 cks. J. Rankine & Son
Hamburg,	25 2 5 cs.
Ochre—	
New York,	68 brls.
Paint—	
Boston,	20 cs.
Painters' Colours—	
Antwerp,	8 cks.
Rotterdam,	8 3 cs. J. Rankine & Son
Hamburg,	5
Rotterdam,	15 pkgs.
Phosphate of Lime—	
Antwerp,	510 bgs.
Plumbago—	
Antwerp,	1 bg.
Potash—	
Hamburg,	38 cks.
Rotterdam,	40 J. Rankine & Son
Potassium Prussiate—	
Antwerp,	12 cks.
Rosin—	
New York,	100 brls.
Saltpetre—	
Hamburg,	50 kgs.
Soap—	
Philadelphia,	500 cs.
Sodium Acetate—	
Antwerp,	5 cks.
Strontium Nitrate—	
Iquique,	19,738 bgs. A. Cross & Sons
Sodium Salicylate—	
Rotterdam,	1 bx. J. Rankine & Sons

Starch—			
Flume,	100 bgs.	J. Anderson	
"	20	Wm. Stirling	
"	10	Jas. Angus	
Rotterdam,	88 cs. 32 crts.	J. Rankine & Son	
Antwerp,	8		
Stearine—			
Rotterdam,	17 brls.	J. Rankine	
Antwerp,	68 bgs.	& Son	
Sulphur—			
Flume,	30 brls.		
Messina,	780 bgs. 78 cks.		
Tannic Acid—			
Hamburg,	5 cks.		
Tartar—			
Bordeaux,	15 cks.		
Tartaric Acid—			
Rotterdam,	10 cks.	J. Rankine	
		& Son	
Treacle—			
Philadelphia,	1,250 brls.		
Varnish—			
New York,	10 brls.		
Verdigris—			
Hamburg,	6 cks.		
Waste Salt—			
Hamburg,	200 l. fine bgs.		
White Lead—			
Antwerp,	17 cks.		
Rotterdam,	22	J. Rankine	
		& Son	
Wood Pulp—			
Flume,	204 bks.		
Christiana,	547 l.	Brown,	
		Stewart & Co.	
Gochsburg,	140		
Christiana,	2,008		

Zinc Oxide—			
New York,	100 brls.		
Antwerp,	15 cks.	J. Rankine	
Rotterdam,	10	& Son	
Zinc White—			
Rotterdam,	100 cks.	J. Rankine	
		& Son	

TYNE.

Week ending April 20th.

Alum Earth—			
Hamburg,	35 cks.	Tyne S. S. Co.	
Ammonium Chloride—			
Rotterdam,	2 cks.	Tyne S. S. Co.	
Barytes—			
Rotterdam,	2,080 bgs.	Julius, Hulsen,	
		& Co.	
Rotterdam,	200	22 cks.	Tyne S. S. Co.
Cod Oil—			
Trondhjem,	18 brls.		
Bergen,	10		
Colours—			
Antwerp,	13 cks. 2 cs.	Tyne	
		S. S. Co.	
Rotterdam,	12	1 l.	"
Gelatin—			
Rotterdam,	3 cs.	Tyne S. S. Co.	
Glass—			
Hamburg,	2 cks. 20 bgs.	Tyne	
		S. S. Co.	
Kieselguhr—			
Berlin,	120 bgs.		
Limestone—			
Antwerp,	1 cs. 3 crts.	Tyne	
		S. S. Co.	

Paint—			
Hamburg,	10 cs. 10 dms.	Tyne	
		S. S. Co.	
Phosphate—			
Antwerp,	380 l.	Langdale's	
		Chemical M. Co.	
Pyrites—			
Huelva,	2,514 l.	Scott Bros.	
Soda—			
Antwerp,	3 brls.	Tyne S. S. Co.	
Starch—			
Antwerp,	280 cs.	Tyne S. S. Co.	
Stearine—			
Antwerp,	12 bgs.	Tyne S. S. Co.	
Tartaric Acid—			
Rotterdam,	3 cs. 3 cks.	Tyne	
		S. S. Co.	
Ultramarine—			
Hamburg,	10 cs.	Tyne S. S. Co.	
Wood Pulp—			
Laurvig,	60 brls.		

GOOLE.

Week ending April 17th.

Alum—			
Rotterdam,	60 bgs.		
Colours—			
Hamburg,	10 cs.		
Ghent,	12 cks.		
Dyestuffs—			
Alizarine			
Rotterdam,	226 pkgs	73 brls.	
Extracts			
Rouen,	17 cks.		
Dyestuffs (otherwise undescribed)			
Boulogne,	8 cks. 24 cs.		
Rotterdam,	708 pkgs		

Farina—			
Hamburg,	291 bgs.		
Delfsryhl,	708		
Glue—			
Rotterdam,	10 cs.		
Plumbago—			
Boulogne,	6 cks.		
Potash—			
Rotterdam,	30 cks.		
Antwerp,	2 dms.		
Pyrites—			
Huelva,	1,365 l.		
Saltpetre—			
Hamburg,	2 cks.		
Soap—			
Hamburg,	14 brls.		
Soda—			
Rotterdam,	5 cks.		
Starch—			
Rotterdam,	20 cs.		
Sulphuric Acid—			
Rotterdam,	10 cks.		

GRIMSBY.

Week ending April 20th.

Albumen—			
Hamburg,	5 cks. 4 pkgs.		
Chemicals (otherwise undescribed)			
Hamburg,	5 brls. 6 cs. 2 cks.		
Coal Tar Dyes—			
Antwerp,	12 pkgs. 1 cs.		
Hamburg,	50		
Colours—			
Rotterdam,	1 cs.		
Hamburg,	8 cks.		
Antwerp,	6	86 pkgs.	
Zinc Ashes—			
Antwerp,	5 cks.		

EXPORTS OF CHEMICAL PRODUCTS

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.			
Week ending April 20th.			
Acids—			
Nitric,	10 cs.	420	
Calcium,	2	27	
Alkali—			
Cape Town,	25 l. 15 c.	423	
Delagoa Bay,	2	15	
Alum—			
Bourges,	15 l. 14 c.	420	
Ammonia—			
Rotterdam,	15 l. 2 c.	418	
Ammonium Carbonate—			
Yokohama,	2 l.	424	
Kobe,	3 cks.	30	
Dunkirk,	18 c.	30	
Cologne,	3	113	
Ammonium Chloride—			
Sydney,	1 l. 2 c.	422	
Ghent,	1 cks.	4 cks.	
Naples,	1	10	
Yokohama,	10	14	
Boulogne,	1	12	
Constantinople,	1	12	
Yarna,	10	16	
Calcutta,	9	16	
New York,	34	407	
Liban,	1	31	
Ammonium Sulphate—			
Canaria,	1 l.	427	
Amsterdam,	250	429	
Jamaica,	4	40	
Bremen,	150	1,688	
Rotterdam,	40	433	
Bruges,	10	103	
Osaka,	115	1,187	
Hamburg,	150	1,573	
Amorphous Phosphorus—			
Cape Town,	17 c.	4106	
Anhydrous Ammonia—			
Dusseldorf,	29 cydres.	4127	
Arsenic—			
Yokohama,	5 l.	428	
B. Ayres,	1	10	
Amsterdam,	8 brls.	23	
Borax—			
Harlingen,	10 cs.	411	
Brisbane,	23 l. 17 c.	28	
Carbonic Acid Gas—			
London,	2 cs.	420	
Caustic Soda—			
Dresden,	3 l.	422	
Dresden,	1	2	
Tromsø,	1	2	
Algeria Bay,	12	55	
St. Petersburg,	5	7	
Vigo,	12	27	
Dusseldorf,	15	2	
Auckland,	2	7	
Chemicals (otherwise undec.)—			
Harlingen,	4 c.	422	
E. London,	2 cs.	1 kg.	41
Natal,	6	13	110
Brisbane,	4	13	26
Sydney,	3	25	
Algeria Bay,	3 pkgs.	28	
Chloride of Lime—			
Cape Town,	10 dms.	412	
Citric Acid—			
Adelaide,	3 c.	418	
Cape Town,	1 kg.	8	
Calcutta,	1 brl.	15	
Christchurch,	1	7	
Danais,	10	61	
Brussels,	5	31	
Liban,	10	37	
Marseilles,	6	61	
Brisbane,	2 cks	60	
Natal,	1	8	
Bombay,	1	8	
Oporto,	1 l.	3	128
Hamburg,	15	2	156
Valparaiso,	2	13	
Coal Products—			
Alizarine	25 kgs.	4160	
Boston,	40 pkgs.	732	
Aniline Colours			
Sydney,	1 cs.	419	
Aniline Dye			
Sydney,	1 cs.	419	
Rio de Janeiro,	1	25	
Aniline Oil			
Stettin,	8 cks.	4200	
Anthracene			
Cologne,	80 cks.	4513	
Dusseldorf,	154	1,910	
Rotterdam,	300	1,300	
Benzol			
Treport,	12 cks.	496	
Carbolic Acid			
Paris,	15 cks.	432	
Marseilles,	85 pkgs.	98	
Algeria Bay,	3 cs.	39	
Santos,	10	75	
Yokohama,	240 dms.	575	
Rotterdam,	98	50 brls. 500	
Kobe,	160	283	
Coal Tar Dyes			
Boston,	4 pkgs.	471	
Crescote			
Ghent,	11,000 galls.	4291	
New York,	400 cks.	155	
Dieppe,	27,500	123	
Naphthalene			
Le Treport,	1 ck.	410	
Paraffin Wax			
Liban,	50 bgs.	4110	
Pitch			
Boston,	2,222 bgs.	4347	
Antwerp,	510	803	
Nantes,	80	120	
Halifax,	100 brls.	20	
Bombay,	113	54	
Dunkirk,	1,735	2,830	
Pyridine Bases			
Malina,	6 cks	447	
Tar			
Bombay,	35 brls.	463	
Natal,	300 dms.	32	
Madras,	87 cks.	52	
Boston,	499	250	
Rio de Janeiro,	50	26	
Tar Oil			
Hamburg,	234 cks.	4146	
Coal Products (otherwise undec.)—			
Hamburg,	200 brls.	498	
Malta,	10	30 frks.	25
Newcastle,	50 dms.	11	
New York,	400	155	
Copper Sulphate—			
Liban,	44 l.	4620	
Hamburg,	8 c.	20	
Paris,	5	2	90
Cream of Tartar—			
Sydney,	2 l. 4 c.	4149	
Fremantle,	4	13	
Ghent,	3	10	
Yokohama,	1	21	
Townsville,	5 cs.	18	
Wellington,	1	7	
Disinfectants—			
Cape Town,	5 l. 4 c.	41	
Gothenburg,	2 cks.		
San Francisco,	73 dms.		
Brisbane,	12 cs.		
Calcutta,	4		
Hamburg,	23		
Antwerp,	25		
Magnesia—			
Halifax,	12 c.		
Manure—			
Bundaberg,	14 l. 3 c.	41	
Madeira,	50	3	
Harburg,	474	6	
Cullera,	187	10	
Rouen,	72	18	
Mauritius,	40		
Limon,	12		
Berbec,	20		
Gothenburg,	295	11	
Cherbourg,	233		
Oxalic Acid—			
Harlingen,	1 l. 15 c.	41	
Antwerp,	1	2	
Phosphoric Acid—			
Townsville,	5 l.		
Phosphorus—			
Sydney,	23 cs.	41	
E. London,	4		
Potash—			
Sydney,	1 l. 14 c.	41	
Potash Crystals—			
Paris,	2 cs.		
Potash Salts—			
Delagoa Bay,	10 l. 3 c.	41	
Potassium Bicarbonate—			
Yokohama,	1 l. 10 c.	41	
Potassium Bichromate—			
Cape Town,	12 c.	41	
Potassium Carbonate—			
B. Ayres,	1 l. 2 c.	41	
Potassium Chlorate—			
New York,	3 l. 8 c.	41	
Potassium Chloride—			
Colombo,	25 l.	41	
Potassium Prussiate—			
New York,	83 cks.	41	

Allic Acid —		
Bay, 1 cs.	£12	
Altre —		
side, 1 t.	£22	
Bay, 9 12 c.	246	
ey, 7 5	169	
castle, 10	11	
h, 5 11	138	
rt, 15	12	
le Janeiro, 6 13	165	
of Soda & Salts of Lime —		
nto, 10 cs. 10 kgs.	£254	
Dip —		
res, 1,250 cs. 3 t. 13 c.	£4,098	
Town, 55 48	591	
ane, 100 drs.	45	
eston, 30	29	
ourne, 170	38	
ica, 25	11	
Ash —		
land, 5 c. 3 t.	£22	
Crystals —		
ita, 3 t. 6 c.	£7	
m—		
ts, 10 c	£150	
m Bicarbonate		
antle, 8 c.	£3	
land, 1 t. 1	7	
m Silicate—		
land, 5 t.	£52	
m Sulphate—		
es, 100 t.	£100	
m Sulphite—		
side, 5 c.	£11	
ur—		
a Bay, 5 t.	£20	
ey, 3	24	
aberg, 34 cks. 30	120	
sville, 2 4 c.	25	
Town, 17 17	105	
l, 1 11	11	
ur Dioxide —		
2 c.	£19	
uric Acid —		
46 cs.	£38	
a Bay, 6	10	
se, 3 pkgs.	23	
6 dms.	10	
phosphate —		
rdam, 14 t. 15 c.	£31	
ric Acid —		
side, 10 c.	£46	
res, 4 cks.	91	
Town, 2	11	
hama, 15	70	
ey, 1 t. 10	30 kgs 267	

LIVERPOOL.

Week ending April 24th.

nen —		
3 t. 14 c.	£187	
l —		
side, 40 cks.		
li —		
1 t. 5 c.	£9	
4 11	1 q. 28	
ax, 1	7	
4	28	
onia (Liquid) —		
imbo, 1 c. 1 q.	£10	
onium Carbonate —		
azaire, 11 c. 1 q.	£16	
e, 1 t. 5	41	
erp, 8	10	
York, 14 10	485	
water, 10	16	
delphia, 6 7 3	219	
ey, 4 1	7	
a, 15	25	
onium Chloride —		
fairwater, 4 t. 10 c.	3 q. £155	
seilles, 1 4	39	
erp, 1	26	
on, 12	17	
se, 5 8	1 83	
as, 5 5	2 9	
nica, 2 5	12	
kirk, 6	8	
andria, 1	37	
onium Sulphate —		
adoes, 10 t. 10 c.	£117	
rang, 20 19	225	
abaya, 60 18	2 q. 655	
orn, 20	235	
iga, 107 1	1,186	
Palmas, 15	168	
ncia, 183 6	1,981	
York, 60 18	650	

Asbestos —		
Callao, 3 cs.		
Rio de Janeiro, 1		
M. Video, 10 bgs.		
Bleaching Powder —		
Baltimore, 36 cks.		
Bombay, 13 20 dms. 10 cs.		
Boston, 802		
Montreal, 116		
Newport News, 328 116 brls.		
New York, 458 20 14 bxs.		
Oporto, 116		
Philadelphia, 195		
Portland, M., 10 bls.		
Riga, 54 cks.		
Rosario, 10		
San Francisco, 31		
San Sebastian, 30		
Barcelona, 6		
Bilbao, 45		
Callao, 7		
Newfairwater, 10		
Venice, 10		
Vera Cruz, 10 10		
Sydney, 54 t. 12 c.	£123	
Boracic Acid —		
Boston, 3 t.	£90	
New York, 5	150	
Borax —		
Newfairwater, 5 t. 14 c. 2 q. £120		
Sydney, 1	20	
Antwerp, 12 17 3	260	
Sagua la Grande, 5 2 5		
Hamburg, 10 9 2	210	
Rotterdam, 8 13 2	172	
Galatz, 4 1 3	78	
Montreal, 1 2 3	23	
Melbourne, 2 5 1	47	
Higo, 1 3 3	29	
Borax Crystals —		
Valparaiso, 1 t. 11 c. 1 q. £29		
Calcium Chloride —		
Sydney, 5 t. 2 c.	£12	
Camphor —		
New York, 1 c. 1 q. £3		
Carbolic Acid —		
Hamburg, 1 t. 11 c.	£79	
Mexico City, 2 1 q. 5		
Piræus, 1	6	
Genoa, 11	27	
Yokohama, 2 15	135	
Carbonic Acid Gas —		
Sierra Leone, 4 c.	£10	
Castor Oil —		
Trinidad, 3 cs.		
M. Video, 4 dms.		
Caustic Potash —		
New York, 10 c.	£14	
San Francisco, 2 t. 2	60	
Caustic Soda —		
Alicante, 50 dms.		
Antwerp, 65	27 brls.	
Baltimore, 410		
Barcelona, 448 141 cks.		
Cartagena, Sp., 34 15		
Ceara, 5		
Corunna, 15		
Fairwater, 154		
Genoa, 30		
Havana, 30		
Higo, 110		
Malaga, 10		
Manaos, 5		
Marseilles, 20		
Nagasaki, 50		
Newport News, 350	50 brls.	
New York, 450	8 bxs.	
Rouen, 70		
San Francisco, 350	10	
Shanghai, 6		
Venice, 123		
Amsterdam, 33		
Bilbao, 15		
Bordeaux, 100		
Boston, 210	30 100 brls	
Brisbane, 7		
B. Ayres, 277		
Gothenburg, 4		
Hamburg, 76		
Kingston, Jam., 17		
La Guayra, 40		
Mauritius, 40		
Melbourne, 31		
M. Video, 30		
Odessa, 380		
Oporto, 30		
Pernambuco, 50		
Quebec, 10		
Rangoon, 35		
Reval, 65	55	
Rosario, 80		
Santos, 15		
Seville, 332		
Sourabaya, 475		

Volo, 40		
Yokohama, 100		
Chemicals (otherwise undescribed)		
New York, 5 t. 5 c.	£172	
Rangoon, 1 cs.	11	
Rotterdam, 18		
Stettin, 10	18	
Piræus, 5	0	
Philadelphia, 13 8	435	
Alexandria, 1	37	
China Clay —		
Boston, 1,094 t.		
Rio de Janeiro, 46 cks.		
Lisbon, 5 15 c.		
Naples, 20		
Newcastle, 38		
Philadelphia, 98		
Chloroform —		
Vera Cruz, 2 cs.		
Citric Acid —		
Montreal, 3 c. 2 q. £29		
Coal Products —		
Aniline Colours		
New York, 8 brls.		
Aniline Oil		
St. Nazaire, 2 dms.		
Boston, 5 cks.		
Aniline Salts		
Piræus, 15 cks.		
Boston, 20		
Anthracene		
Rotterdam, 24 cks.		
Naphthaline		
New York, 5 cks.		
Naphthaline Colours		
New York, 3 cks.		
Pitch		
Marseilles, 1,005 t.		
Rouen, 2 cks.		
Tar		
Baltimore, 30 cks. 250 dms.		
Belize, 20		
Galatz, 50 brls.		
Philadelphia, 100		
Gaboon, 4		
Tar Salts		
New York, 19 cks.		
Copperas —		
Leghorn, 10 t.	£18	
San Francisco, 27 6 c.	42	
Beyrout, 5	10	
Galatz, 2 10	5	
Mersyne, 5	8	
Copper Sulphate —		
Sydney, 5 t.	£72	
Bombay, 7 2 c. 2 q.	106	
Cette, 22 16 1	365	
Bordeaux, 274 2 1	3,805	
Nantes, 120 5 3	1,685	
Paris, 45	636	
La Pallice, 4 19 3	75	
Konigsberg, 5 3 2	76	
Oporto, 17 12	259	
Venice, 25 9 2	224	
Rouen, 67 2	948	
Constantinople, 5 18	85	
Lisbon, 10 5	140	
Genoa, 27 5 2	384	
Patras, 8 5 1	132	
Brindisi, 5 2 3	73	
M. Video, 3 14 3	64	
Montreal, 2 7	30	
Cream of Tartar —		
New York, 1 c.	£4	
Disinfectants —		
Bombay, 10 c.	£26	
B. Ayres, 5 t. 2	127	
Madras, 15 1 q.	29	
Gelatine —		
Philadelphia, 233 bxs. 1 ck.		
N. York, 80		
Glue —		
Barcelona, 18 cks.		
Kingston, Jam., 1		
N. York, 50 bgs.		
Guan —		
Seville, 10 t.	3 q. £72	
Gypsum —		
N. York, 35 t. 7 c.	£113	
Iron Oxide —		
Antwerp, 1 t. 19 c.	£50	
Lime —		
Appam, 20 brls		
Magnesia —		
Corunna, 1 cs.		
Vera Cruz, 2		
Magnesium Carbonate —		
Havre, 5 t. 1 c. 2 q. £82		
Magnesium Chloride —		
Paris, 5 t. 3 c.	£13	
Magnesium Sulphate —		
Maceio, 10 brls.		

N. York, 2 kgs.		
Manure —		
St. John's Nfld, 1 t.	£7	
Bordeaux, 85 4 c. 1 q.	510	
St. Nazaire, 25 2	63	
Cullera, 75	185	
Rouen, 5	25	
Methyl Alcohol —		
Sierra Leone, 22 dms.		
Ochre —		
Maranham, 2 brls.		
Para, 20 kgs.		
Tangier, 12 cks.		
Oxalic Acid —		
Marseilles, 5 c.	£8	
Paint —		
Cadiz, 60 dms.		
Ceara, 5 brls.		
Gd. Bassa, 1 ck.		
Hamburg, 4 cks. 6 kgs.		
Havana, 18 60		
Havre, 8		
La Libertad, 11 47	15 cs.	
Malta, 30	2 brls.	
Manila, 2		
Montreal, 4		
Para, 4		
Shanghai, 3 54	40 dms.	
Sierra Leone, 10	10 pkgs.	
Valparaiso, 1,156	40 dms.	
Wellington, 18	21	
Yokohama, 21		
Algiers, 7		
Bangkok, 41 cs.		
Barranquilla, 7	56	
Gibraltar, 92	90	
Hong Kong, 92		
Lagos, 92		
Rio de Janeiro, 1 cs.		
Vera Cruz, 1 cs.		
Painters' Colours —		
Antwerp, 14 cks.		
Baltimore, 76		
Belize, 3 cs. 5 259 kgs. 165 dms.		
Boston, 1	110 brls.	
B. Ayres 100 cs. 40 dms. 226		
Cartagena, N.G., 140	7	
Ceara, 60 7	20	
Galatz, 200		
Gothenburg, 100 bgs.		
Kingston, Jam., 7 cs. 11	6	
Manaos, 9 cks. 19	8	
Montreal, 8 cs. 23	23	
N. York, 1 19 7	3 dms.	
Ottawa, 11 15 41	11 brls.	
Para, 12 tcs. 1	9	
Valparaiso, 175		
Akassa, 13		
Bombay, 2		
Calcutta, 3		
Forcados, 12		
Kurachee, 63		
Piræus, 63	10	
Sourabaya, 150		
Trinidad, 3		
Paraffin Wax —		
Rio de Janeiro, 4 cs.		
Phosphorus —		
San Francisco, 1 cs.	£13	
Yokohama, 6 c.	79	
Shanghai, 1 t.	200	
Higo, 3	650	
Plumbago —		
B. Ayres, 10 cks.		
Potassium Bichromate —		
St. Nazaire, 2 c. 3 q. £5		
Smyrna, 6 t. 6 3	266	
Alexandretta, 1 3 2	48	
Seville, 6 2	14	
Potassium Chlorate —		
Amsterdam, 5 c.	£12	
Yokohama, 7 t. 10	290	
Shanghai, 2 10	100	
Boston, 11 5	463	
Montreal, 10	24	
San Paulo, 1	45	
Gothenburg, 10	480	
Kobe, 2 10	100	
Vera Cruz, 10	29	
New York, 21 5	883	
Alexandria, 2 5	12	
Rotterdam, 2 10	134	
Genoa, 3	158	
Odessa, 1 1	48	
Higo, 7 10	280	
Shanghai, 6 10	259	
Santos, 1	43	
Quicksilver —		
Valparaiso, 100 brls.		
Salt —		
Abonnema, 10 t.		
Accra, 6		
Akassa, 554		

rs' Colours—	
rdam, 10 cks.	
rp, 19 5 cs.	
ry, 803 pks. 4 210 5 dms.	
h, 4 245	
n, 6 4	
ania, 2 4	
hagen, 15 1	
heim, 37 1 pk.	
h, 31	
h, 16	
burg, 8	
arg, 23 1	
berg, 15	
ork, 140	
lam, 70	
lam, 11 1 pkge.	
4	
31	
orus—	
lam, 40 cs.	
Py, 195 t	
k, 226	
750 t.	
dam, 1 cs.	
sim, 20	
burg, 2	
rg, 1	
atinople, 50 cs.	
8 cks.	
dam, 8 cks.	
burg, 10	
lam, 172 tcs.	
dam, 11 cks.	
4	
rg, 30	
am, 2	
line—	
60 dms.	
lam, 18 cks	
125 dms.	
agen, 2 4 1 cs.	
burg, 2	
am, 2	
14 cks.	
GLASGOW.	
Week ending April 25th.	
Sulphate—	
ne, 8 t. 18 c.	
um Sulphate—	
l, 27 t. 10 1/2 c.	
a, 51 1 1/2	
101 5 1/2	
a, 347 1 1/2	
an, 60 3	
go, 30 19 1/2	
g, 74 14 1/2	
ra, 116 11	
6 3 1/2	
253 6 1/2	
y—	
1 c.	
g Powder—	
ne, 11 t. 2 1/2 c.	
5 11	
Oil—	
2 t. 26 c.	
Soda—	
2 t. 2 c.	
2 19	
rm—	
oducts—	
5 t.	
lic Acid	
10 t. 9 c.	
ha	
31 t. 12 c.	
1 4	
11 14	

Pitch	
Antwerp, 875 t.	
Sables D'Olo'ne, 850	
Stockholm, 55	
Ancona, 524 15 c.	£13. 10s.
Madras, 619	
Spain, 441 5	
Venice, 503 4	£84
Bombay, 19 6	
France, 340 12	
Gijon, 120 3	
U.S.A., 174 11	
Tar	
Stettin, 100 brls.	£97
Stockholm, 45 t.	£295. 10s.
Christiania, 1	£39
Calcutta, 11 5 c.	
Madras, 27 13	
Singapore, 11 5 c.	
Bombay, 27 13	
Hong Kong, 4 10	90
Christiania, 3	
Coal Tar Products (otherwise un-	
described) —	
Rotterdam, 150	
Copperas—	
Victoria, 1 t. 12 1/2 c.	
Bombay, 36 12	
Dyestuffs—	
Alizarine	
U.S.A., 2 1/2 c.	
Aniline	
Calcutta, 1	£42
Extracts	
Italy, 1 t. 10 3/4 c.	
Victoria, 1 18 1/4	
U.S.A., 2 16 1/4	
Fustic Extract	
Italy, 13 1/2 c.	
Patent Indigo	
Victoria, 1 t. 3 1/2 c.	
Dyestuffs (otherwise undescribed)	
U.S.A., 151	
Glucose—	
U.S.A., 2 t. 7 c.	
Glue—	
Nagasaki, 60 t. 3 c.	
Guano—	
Trinidad, 10 t	
Demerara, 10	
Lead Acetate—	
Bombay, 4 t. 17 1/2 c.	
Linseed Oil—	
Adelaide, 7 t. 18 1/4 c.	
U.S.A., 88 1/4 glns.	
Macassar, 575	
Malta, 3	
Yokohama, 4 1/2 c.	
Magnesium Sulphate—	
Adelaide, 2 t. 13 c.	
Manganese—	
Basle, 11 t. 11 1/2 c.	
Fiume, 10 10	
Manure—	
Trinidad, 10 t.	
Cullera, 149 15 c.	
Demerara, 10	
France, 2 9 1/2	
Valencia, 207 8	
Muriatic Acid—	
Bangkok, 1	£1
Paint—	
Adelaide, 1	£12
Gibraltar, 125. 10s.	
Italy, 13 c	
Melbourne, 155.	£92
Trinidad, 125	
Demerara, 82	
Bombay, 57	
Calcutta, 4	
Higo, 5 15	
Hong Kong, 9 15 1/2	
Shanghai, 22 3 1/2	
Singapore, 3 19 1/4	
Painters' Colours—	
Bombay, 8 t. 19 1/4 c.	
Stockholm, 2	£303
Calcutta, 124	
Colombo, 45	
Madras, 3 15	69
Singapore, 4 9 1/4	40
Sourabaya, 26 t. 6 c.	
M. Video, 1	
Penang, 1 4 1/2	
Paraffin Wax—	
Italy, 26 t. 6 c.	
Arendal, 1	
Stockholm, 2	
Antwerp, 1 4 1/2	
Barcelona, 4 19 1/4	

Bordeaux, 1 14 1/2	
Fiume, 13 1 1/2	
Leghorn, 4	
Trieste, 27 11	
Bilbao, 1 1 1/2	
Higo, 1 1 1/2	
Valencia, 7 2 1/2	
Venice, 22 6 1/2	
Yokohama, 2 1 1/2	
Phosphates—	
Trinidad, 3 t. 1 1/2 c.	
Potassium Bichromate—	
Italy, 27 t. 13 1/2 c.	
Rouen, 8 3 1/2	£200
Rotterdam, 5 12 1/2	
Barcelona, 20 3	
U.S.A., 8 8 1/2	
Venice, 11 4 1/2	
Antwerp, 1 1	
Bombay, 1	
Potassium Cyanide—	
Fremantle, 2 t. 3 c.	
Potassium Prussiate—	
Yokohama, 10 c.	
Rosin Oil—	
Bombay, 1	£23
Salt—	
Gibraltar, 1 t.	
Den. erara, 35	
Slag—	
Rotterdam, 568 t.	
Soap—	
Bombay, 1 t	
St. John's, Nfld., 1 12 1/2 c.	£90
Trinidad, 2	
Rotterdam, 1 5	
Stettin, 2 10	
Demerara, 2 10	
Sodium Bichromate—	
Italy, 31 t. 5 1/4 c.	
Rouen, 12 12	
U.S.A., 12 9 1/2	
Antwerp, 4 5 1/4	
Sodium Phosphate—	
U.S.A., 5 t.	
Starch—	
Adelaide, 2 t. 9 1/4 c.	
Antwerp, 1	
Stearine—	
U.S.A., 10 t.	
Sulphur—	
Demerara, 3 t. 17 1/4 c.	
B. Ayres, 5	
Superphosphates—	
Trinidad, 10 t.	
Tallow—	
Singapore, 1 t. 3 1/2 c.	
Treacle—	
Stockholm, 110 t.	
Christiania, 11 17 c.	
Yarnish—	
Bombay, 480 glns.	
Italy, 3 c.	
White Lead—	
Adelaide, 5 t. 2 1/2 c.	£12
Rotterdam, 2 3 1/2	
Antwerp, 3 6	
Bombay, 5 5 1/2	
B. Ayres, 5 5 1/2	

TYNE.

Week ending April 20th.

Alkali—	
Amsterdam, 8 t. 15 c.	
Rotterdam, 9 10	
Hamburg, 5 11	
Ammonium Carbonate—	
Barcelona, 10 c.	
Antimony—	
Rotterdam, 2 t. 10 c.	
Hamburg, 5	
Arsenic—	
Reval, 2 t. 12 c.	
Barium—	
Rouen, 5 t. 1 c.	
Barytes—	
Hamburg, 199 t.	
Bleaching Powder—	
Riga, 14 t. 16 c.	
Copenhagen, 20 6	
Gothenburg, 31 14	
Lisbon, 15 2	
Amsterdam, 23 8	
Nakskov, 3 13	
Rotterdam, 54 17	
Hamburg, 33 11	
Antwerp, 40 6	
Konigsberg, 80 9	
Rouen, 10	

Caustic Soda—	
Barcelona, 31 t. 17 c.	
Riga, 10 3	
Gothenburg, 55 2	
Rotterdam, 2 6	
Hamburg, 24 7	
Piraeus, 10 10	
Chemicals (otherwise undescribed,	
Lisbon, 5 c.	
Lamp Black—	
Rotterdam, 1 t. 12 c	
Litharge—	
Riga, 5 t. 7 c.	
Copenhagen, 1 1	
Gothenburg, 3 8	
Lisbon, 22 4	
Rotterdam, 16	
Rouen, 1 13	
Magnesia—	
Hamburg, 3 t. 14 c.	
Manure—	
Valencia, 185 t.	
Reval, 147	
Naphthaline—	
Riga, 15 t. 4 c.	
Paint—	
Hamburg, 1 t. 13 c.	
Antwerp, 1 10	
Phosphorus—	
Valencia, 2 t.	
Soda—	
Amsterdam, 1 t. 5 c.	
Antwerp, 7 4	
Konigsberg, 10 16	
Christiania, 16 12	
Soda Ash—	
Gothenburg, 78 t. 6 c.	
Barcelona, 2 1	
Konigsberg, 121 1	
Christiania, 20 7	
Sodium Sulphate—	
Lisbon, 10 t. 5 c.	
Rotterdam, 10 5	
Superphosphate—	
Valencia, 60 t. 1 c.	
White Lead—	
Riga, 6 t. 15 c.	
Copenhagen, 2 12	
Bergen, 1	
Lisbon, 2 4	

GOOLE.

Week ending April 17th.

Chemicals (otherwise undes.) —	
Antwerp, 1 ck.	
Bruges, 1 dm.	
Ghent, 25 sks.	
Coal Products—	
Benzol	
Hamburg, 96 cks.	
Rotterdam, 145 8 dms.	
Pitch	
Rotterdam, 57 t.	
Antwerp, 470	
Coal Products (otherwise undes.)—	
Boulogne, 3 cks. 2 cs.	
Hamburg, 60	
Rotterdam, 926 4 10 dms.	
Dyestuffs (otherwise undescribed)	
Hamburg, 26 cs.	
Rotterdam, 1 ck.	
Manure—	
Bruges, 203 bgs.	
Ghent, 720	
Hamburg, 120	
Painters' Colours—	
Hamburg, 29 cs. 18 cks.	
Rotterdam, 1	
Dunkirk, 10 dms.	

GRIMSBY.

Week ending April 20th.

Chemicals (otherwise undescribed)	
Antwerp, 1 ck.	
Dieppe, 2 2 cs.	
Hamburg, 40 brls. 13 16 pkgs.	
Rotterdam, 8	
Coal Products (otherwise undes.)—	
Dieppe, 258 cks. 2 cs. 3 tins.	
Painters' Colours—	
Antwerp, 1 cs.	

PRICES CURRENT.

WEDNESDAY, MAY 1ST, 1911

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may

Acids:—

	£	s.	d.
Acetic, 25% and 40%	per cwt.	6 3	9 3
Glacial	per lb.	40	0
Arsenic S.G., 2000°	per lb.	0 15	0
Fluoric	per lb.	0 0	3 3
Muriatic (Tower Salts), 30° Tw.	per bottle	0 0	10
(Cylinder), 30° Tw.	per lb.	0 3	0
Nitric 80° Tw.	per lb.	0 0	1 5
Nitrous	per lb.	0 0	1 3
Oxalic	nett	0 0	3 3
Phosphoric, 1750°	per lb.	0 0	11
Picric	per lb.	0 0	10
Sulphuric (fuming 50%)	per ton	15	10 0
(monohydrate)	per lb.	5	10 0
(Pyrites, 168°)	per lb.	3	0 0
(free from arsenic, 145°)	per lb.	1	5 0
Sulphurous (solution) S.G. 1025	per lb.	3	0 0
Tannic (pure)	per lb.	0	1 0
Tartaric	per lb.	0	10 3
Arsenic, white powdered	nett per ton	14	15 0
Alum (loose lump)	per lb.	4	12 6
Alumina Sulphate (pure)	per lb.	4	12 6
Aluminoferrous	per lb.	2	7 6
Aluminium	per lb.	0	2 10
Ammonia, Anhydrous	per lb.	0	1 3
" 880=28° B.	per lb.	0	0 3
" =24° B.	per lb.	0	0 2 3
Carbonate	nett	0	0 3 3
Muriate	per ton	22	10 0
(sal-ammoniac) 1st & 2nd	per cwt.	39	37
Nitrate	per ton	40	0 0
Phosphate	per lb.	0	0 8 4
Sulphate (grey) London	per ton	9	7 6
(grey) Hull	per lb.	9	7 6
Aniline Oil (pure)	per lb.	0	0 5 3
Aniline Salt	per lb.	0	0 4 3
Antimony	per ton	31	0 0
(tartar emetic)	per lb.	0	0 7
(golden sulphide)	per lb.	0	0 10
Barium Chloride	per ton	6	10 0
Carbonate (native)	per lb.	3	5 0
Sulphate (native levigated)	per lb.	45	10 75
Bleaching Powder, 35%	nett	7	0 0
Liquor, 7%	per lb.	3	10 0
Bisulphide of Carbon	per lb.	11	0 0
Chromium Acetate (crystal)	per lb.	0	0 6
Calcium Chloride	per ton	2	2 6
China Clay (at Runcorn) in bulk	per ton	15	10 30

Coal Tar Products and Dyes:—

Alizarine (artificial) 20%	net per lb.	0	0 8
Magenta	per lb.	0	3 9
Anthracene, 30% A, f.o.b. London	per unit per cwt.	0	1 1
Benzol, 90% nominal	per gallon	0	1 0 1/2
50/90	per lb.	0	1 0
Carbolic Acid (crystallised 40°)	per lb.	0	0 6 3
(crude 60°)	per gallon	0	1 7 1/2
Creosote (ordinary)	per lb.	0	0 2
(filtered for Lucigen light)	per lb.	0	0 2
Crude Naphtha 30% @ 120° C.	per lb.	0	0 5
Grease Oils, 22° Tw.	per ton	2	10 0
Pitch, f.o.b. Liverpool or Garston	per lb.	1	13 0
Solvent Naphtha, 90% at 160°	per gallon	0	1 1
Lucigen and "Wells" Oils	per lb.	0	0 2 1/2
Copper	per ton	41	2 6
Sulphate	per lb.	15	10 0
Oxide (copper scales)	per lb.	39	0 0
Glycerine (crude)	per lb.	16	10 0
(distilled S.G. 1250°)	per lb.	45	0 0
Iodine	nett, per oz.	0	0 9
Iron Sulphate (copperas)	per ton	1	5 0
Sulphide (antimony slag)	per lb.	2	0 0
Lead (sheet) for cash	per lb.	11	2 6
Litharge Flake (ex ship)	per lb.	13	5 0
Acetate (white)	per lb.	24	10 0
brown	per lb.	14	10 0
Carbonat (white lead) pure	per lb.	16	0 0
Nitrate	per lb.	18	15 0

Lime, Acetate (brown)	per ton	5	10
(grey)	per ton	8	10
Magnesium (ribbon and wire)	per oz.	0	2
Chloride (ex ship)	per ton	2	7
Carbonate	per cwt.	1	17
Hydrate	per ton	17	0
Sulphate (Epsom Salts)	per ton	3	0
Manganese, Sulphate	per lb.	17	0
Borate	per cwt.	2	15
Ore, 70%	per ton	4	5
Methylated Spirit, 61° O.P.	per gallon	0	1
Naphtha (Wood), Solvent	per lb.	0	1
Miscible, 60° O.P.	per lb.	0	3
Oils:—			
Cotton-seed	per ton	18	10
Linseed	per ton	21	0
Petroleum, American	per gallon	0	0
Stearine	per ton	25	10
Phosphorus (yellow)	per lb.	0	2
(red)	per lb.	0	2
Potassium (metal)	per oz.	0	3
Bichromate	nett per lb.	0	0
Carbonate, 90% (ex ship)	per ton	16	15
Chlorate	per lb.	0	0
Cyanide, 98%	per lb.	0	1
Hydrate (Caustic Potash) 80/85%	per ton	21	5
(Caustic Potash) 75/80%	per ton	19	15
(Caustic Potash) 70/75%	per ton	19	10
Nitrate (refined)	per cwt.	1	2
Permanganate	per cwt.	2	17
Prussiate Yellow	per lb.	0	0
Sulphate, 90% (ex ship)	per ton	9	15
Muriate, 80% (do.)	per ton	8	15
Silver (metal)	per oz.	0	2
Nitrate	per lb.	0	2
Sodium (metal)	per lb.	0	2
Carb. (refined Soda-ash) 48%	nett per ton	4	15
(Caustic Soda-ash) 48%	per lb.	4	0
(Carb. Soda-ash) 48%	per lb.	3	15
(Alkali) 58%	per lb.	3	10
(Soda Crystals)	per lb.	2	2
Acetate (ex-ship)	per lb.	14	0
Arseniate, 45%	per lb.	11	0
Chlorate	per lb.	0	0
Borate (Borax)	nett, per ton	18	0
Bichromate	per lb.	0	0
Hydrate (77% Caustic Soda) (f.o.b.) net per ton	per ton	9	7
(74% Caustic Soda)	per ton	8	7
(70% Caustic Soda)	per ton	7	10
(60% Caustic Soda)	per ton	6	10
(60% Caustic Soda, cream) (f.o.b.)	per ton	6	7
Bicarbonate	per lb.	6	10
Hyposulphite	per lb.	5	10
Manganate, 30%	per lb.	16	0
Nitrate (95%) ex-ship Liverpool	per cwt.	11	8
Nitrite, 98%	per ton	29	0
Phosphate	per lb.	4	10
Silicate (glass)	per ton	4	10
(liquid, 100° Tw.)	per lb.	3	10
Stannate, 40%	per cwt.	5	2
Sulphate (Salt-cake)	per ton	0	17
(Glauber's Salts)	per lb.	2	5
Sulphide	per lb.	8	0
Sulphite	per lb.	5	5
Strontium Hydrate, 100%	per lb.	8	10
Sulphocyanide Ammonium, 95%	per lb.	0	0
Barium, 95%	per lb.	0	0
Potassium	per lb.	0	0
Sulphur (Flowers)	per ton	5	15
(Roll Brimstone)	per ton	5	0
Brimstone: Best Quality	per ton	1	12
Superphosphate of Lime (26%)	per ton	2	7
Tallow	per lb.	23	10
Tin Crystals	per lb.	0	0
English Ingots	per ton	68	0
Zinc (Spelter)	per lb.	14	0
Chloride (solution, 100° Tw.)	per lb.	3	7

THE HEMICAL TRADE JOURNAL

AND
OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

116.

SATURDAY, MAY 11, 1895.

Vol. XVI.

Contents.

PAGE	PAGE
Bricks	301
Chemical Industry ..	302
Chemical Products ..	303
General Market	303
Market	303
Miscellaneous Chemical Market ..	308
West of Scotland Chemicals	308
Liverpool Oil and Colour Market ..	308
Hull Paint, Oil, and Colour Report ..	309
Tyne Chemical Report	309
New Companies	309
The Patent List	309
Gazette Notices	309
Imports	309
Exports	312
Prices Current	312

Notices.

Communications for the *Chemical Trade Journal* should be sent to the Editor, and Cheques and Post Office Orders made payable to—

DAVIS BROS., 32, Blackfriars Street, MANCHESTER.

Our Registered Telegraphic Address is—

"Expert, Manchester."

Terms of Subscription, commencing at any date, to the *Trade Journal*,—payable in advance,—including postage of the world, are as follows:—

By (52 numbers) **12s. 6d.**
Yearly (26 numbers) **6s. 6d.**
Quarterly (13 numbers) **3s. 6d.**

Subscribers will oblige by making their remittances for subscriptions by Post Office Order, crossed and payable to "Davis Bros."

Reports, and correspondence on all matters of interest to the chemical and allied industries, home and foreign, are solicited. Contributors should condense their matter as much as possible, to the inside only of the paper, and in all cases give their names and addresses, not necessarily for publication. Sketches should be sent on separate sheets.

Contributors are invited to forward items of intelligence, or cuttings from newspapers, of interest to the trades concerned.

Communications for the Editor, if intended for insertion in the next issue, should reach the office not later than **Tuesday** evening.

Advertisements.

Advertisements of Situations Vacant, Premises on Sale or To be Let, and Wants, and Specific Articles for Sale by Private Contract are accepted in the *Chemical Trade Journal* at the following rates:—

10 Words and under 2s. 6d. per insertion
Each additional 10 words 6d. "

Advertisements, Announcements in the Directory Columns, and all Advertisements, are charged at the Tariff rates, which will be forwarded on request.

Advertisements intended for insertion in the current week's issue should reach the office by **Wednesday morning** at the latest.

CURRENT TOPICS.

THE HUMOURS OF RIVER PURIFICATION.

THE Mersey and Irwell Joint Committee are likely to have their hands full for the next few months. The warm weather with which we are being blessed just now will no doubt bring on a plentiful crop of complaints from the residents in certain parts of the districts which come within the jurisdiction of the Committee, as sufferers feel more bitterly than ever that though the Committee appear very busy the outcome is but small in proportion. Further, however, there is a prospect of internal conflict upon the matter of expenses. At the last meeting notice of a motion in favour of retrenchment was given, while a very pointed reference was made to the sum of £900., representing the salary and expenses of the Committee's Chief Chemist. Certain members of the Committee are evidently very much opposed to that item appearing again in the next year's estimates. The original arrangement was a fee of £700., with travelling expenses. This leaves £200. for travelling expenses over 12 months, which is—well, not exactly low, or even moderate. As an off-set against this criticism the Committee proceeded to make merry over the doings of Salford. It appears that the Committee's inspector has recently been refused the right to take samples from the Corporation Sewage Works. On the strength of this the Committee concluded that the Corporation feared the taking of samples on account of their effluent being in a bad state. Under ordinary circumstances we should be quite willing to admit the justice of the making a deduction of this kind from evidence obtained by putting two and two together.

There is, however, a very palpable feeling among a great many of the members of the Committee to play the avenger on Salford. The record of the Corporation during late years has admittedly not been spotless, but they undoubtedly have done much in the past to try and improve the river Irwell, and those who were then taken to task have been longing to peck back. Under the guise of their newly acquired, and in some instances doubtful, rights to pose as sanitary reformers, certain sections of the Committee have long been itching to get Salford fined so as to be able to cry *tu quoque*. To accomplish this no pains have been spared, as has been shown by the recent prosecution, by means of which it was confidently expected the Corporation would have been amerced. But in jumping to conclusions, the Committee ill-advisedly overlooked one important fact, namely, that though under ordinary conditions their deductions would in all probability be justifiable, under the decidedly extraordinary circumstances which at present exist, their deductions turn the laugh against themselves.

Under Judge Parry's recent decision, the Corporation are not within the Committee's jurisdiction, and the Corporation will endeavour to support this decision against the appeal of

mittee. This being so, had their effluent been as crystal, it would have been simply idiotic for the lion to admit the Committee's rights by allowing the sector to take samples. Whatever the effluent might be like, and we do not suppose it was perfectly pellucid, the committee could not get samples they could not possibly find on that particular occasion, so to talk of "positive—almost conclusive evidence" is nothing but an unfounded presumption. According to the well-known circumstances of other cases, and in this instance the city is veritably verified. Were there no dispute as to the jurisdiction of the Committee, then we should have had a different fish to fry.

NOT WHEELS SET TOO WELL.

Remarks of the Lord Mayor of Manchester at the Sanitary Congress, in which he threw the bulk of the blame for Manchester's smokiness upon household chimneys, have given offence to a few very ardent "smoke doctors." A letter has recently been published in a local daily on the matter, about which we would fain say a few words. In consideration of the sex of the plaintiff, we thought it better to be as gentle as possible, and trust we are forgiven if we were a little warm over the point of provocation. Ladies are prone to be so, as is shown by the high-toned jeremiads of well-meaning members of the Humanitarian League against the dangers of the chemical trade. It is a great relief to bear witness to the fact that our gentle plaintiff is charmed, but is possibly suffering from embers of anger by the recent Congress. The chief complaint is that household chimneys of Manchester are blamed for London and other towns where the air is not so "abused" with such chimneys. The beauties of the River Thames in London and the "villages" which form the suburbs are then glowingly described.

London atmosphere unpolluted? The result of the report by the Manchester Field Naturalists' Society in 1891 is contrary very emphatically. It is all very well to discount the beauty of grand and flowering trees, lovely and so forth, but as we overheard a lady remark to a friend in the midst of a speech at the recent Congress, "all very useless," and unfortunately the same holds good in this case. Further, apart from its own merits, we have serious doubts as to whether the trees at Dulwich and Croydon would compare more favourably with those of Withington, Sale, and Bowdon. There is no use shirking the question. Sanitarians are a hard nut to crack, and they must face the task. At the wrong end, and have left the difficult part till last.

Attracted by factory smoke, which, though of no great aspect, is comparatively harmless, they have it, and, be it to their credit, in a great measure they have. But they have so far overlooked the most insidious wreaths that rise in from the dwellings, offices, and shops in the great industrial centres. In nature the elephant is very dangerous because of his ponderous power, but is amenable to treatment, and comes very docile; not so the serpent, which, though a bagatelle in comparison, is far more deadly, and the power of the Charmer to the full. Sanitarians have tamed the elephant, and they now must tackle the serpent, and not endeavour to dwarf their difficulty by the reptile's existence.

Our Book Shelf.

THEORETICAL CHEMISTRY. By W. Nernst. Translated by Palmer. 697 pp. including index and appendices. 26s. net. London: Macmillan and Co., 1895. 15s. net.

This work is a translation of Nernst's well-known and important treatise on theoretical chemistry viewed from the standpoint of Avogadro's law and thermodynamics. The rapidity with which physical chemistry is rising in importance is ample justification for this work if any is needed. The translation of "Solutions" afforded much valuable assistance to the English, but so far a systematic treatise such as the present translation has been forthcoming.

The book does not profess to give a complete record of all in connection with physical chemistry, but the author wisely describes minutely such work as is of universal significance, or is to achieve permanent good. Further, only proven hypotheses are dealt with prominently, special preference being given to those which are capable of systematic use. There are instances of the practical nature of the work to be found in the solutions given of various lecture experiments whereby such a phenomenon as osmotic pressure may be demonstrated.

Among the chapters of most interest to technologists such sections may be noted as those on physical mixtures, more particularly in reference to fractional distillation, chemical forces, the dissociation of Valency, electrolytic dissociation, and affinity.

Just before the appendices, which are a most useful addition, are three very important chapters on heat and chemical energy, photo-chemistry, and photo-chemistry, all of which are worthy of the attention of those interested in applied science.

The importance of physical chemistry is growing every year upon its furtherance much of our progress in the future depends. That a translation of such an important work is more than welcome, and will doubtless find a place in the library of every scientist who wishes to keep in touch with modern advances, and the student who is approaching maturity it is not only a useful essential source of information.

AN ELEMENTARY TEXT BOOK OF METALLURGY. By J. S. Sexton, 263 pp., including index; 71 illustrations. London: Charles Griffin & Co., Limited, 1895. 6s.

This work forms one of the publishers' well-known series of scientific text books. It is excellently got up and well arranged. The scope of the work is rather devoid of definition, though only intended to afford an introduction to metallurgy, so that no more details than is necessary to the understanding of the general principles is given. It suffers in a way common to many books of this type in that it is little with a good many matters and yet not much of anything, being in some cases in the definitions being so elementary as to be misleading.

The first part deals with the properties of metals, combustion, furnaces, metallurgical processes generally, and kindred matters. Chapters on coke ovens and furnaces are good, as is also the chapter on Producer Gas, each being sufficiently full for the purpose. The descriptions of process in regard to iron and steel are up to date, and well explained by excellent diagrams showing stages of the process from start to finish. These diagrams are the best features of the book. Under steel Saniter's sulphurizing process is referred to. The wet extraction of silver from pyrites is carefully explained, though there is a slight discrepancy between the text and the diagram. The Bessemerizing of Cu is just touched upon. The chapter on lead is very good, and mentions the desilverising processes of the Lumsden process. Gold is well treated, and worthy of much better illustration. Brief mention is made of the application of cyanide to gold extraction. The most novel chapter for an elementary text book is devoted to a short description of the many changes effected by the working of late in metallurgical methods. The beginner is thus acquainted with modern advances. Part II consists of a course for the laboratory, and is worthy of greater prominence. It is likely to gain at the end of the work, since it is one of the characteristic features of the book. As a whole the work is commendable on account of its clearness and convenience for reference, and is entitled to a place in the front rank of purely elementary metallurgical text books.

THE POLLUTION OF THE SHIP CANAL. The appeal of the Mersey and Irwell Joint Committee against the decision of the Honourable Judge Parry in the action against the Salford Corporation has been entered for trial in London, and will, it is expected, be in the course of the this week or next.

Legal Intelligence.

HIGH COURT OF JUSTICE. QUEEN'S BENCH DIVISION.

(Before Mr. Justice Wills without a jury.)

AN IMPORTANT DECISION.

INCANDESCENT GAS LIGHT COMPANY (LIMITED) v. CANTELLO.
In the action the plaintiffs' claim was for an injunction restraining the defendant from infringing the plaintiffs' letters patent in connection with mantles and burners for producing incandescent light, and for

damages. The defendant, who was an ironmonger at Sandown, admitted that he had sold to the plaintiffs' a mantle which had been made by the plaintiffs' and was covered by their letters patent for a mantle to be fixed upon a gas-burner giving an incandescent light. The invention was a very simple one. A netting of cotton was dipped in a solution of oxide of cerium. The substance was then dried and set fire to, burning the cotton fibre, and leaving a cellular tissue coated with cerium oxide.

The plaintiffs sold these mantles with certain restrictions on the box, as follows:—"The licence to use this mantle is granted to the person or persons purchasing the same, or on behalf of the same, purchased from the company or their agents; and sold at the reduced price of 1s. 3d. on the condition that it is only to be used for the purpose of renewal, in connection with burners or apparatus not sold or supplied by the plaintiffs." The defendant sold the mantle made by the plaintiffs, and pasted over the notice on the box with his own label. If he had done so, the notice would have been entitled to be removed.

The case was then called off persons who had purchased the mantle from the defendant with the notice pasted over. The defendant, a tailor at Sandown, said he purchased the mantle for the plaintiffs, and supplied by the plaintiffs.

In the close of the plaintiffs' case, Mr. Bousfield said no case had been made out, as it was not proved that the notice came to the defendant's knowledge at the time of his purchase. Mr. Justice Wills said he should like to hear how the defendant purchased the mantles.

The defendant was called, and said he had for some years been agent for the plaintiffs' mantles. There was no restriction on the box. In January, 1895 he requested a friend, Mr. Coe, to purchase six dozen mantles from Messrs Halletts, the plaintiffs' agents. He did not know of the restrictions until he unpacked the mantles. He was annoyed as he had no notice of the restriction.

Mr. Justice Wills examined.—There was an agent for the sale of them in London, but he bought them in London, as he thought he would get a better price. He bought the burners from the Helio Company. Mr. Bousfield said it was a perfectly bona-fide transaction. The defendant knew the plaintiffs would not supply him direct, and he had no right to employ a friend to buy the goods in London.

Mr. Justice Wills, in reply, cited "Parker v. the South-Eastern Railway Co." (2 C.P.D., 416), and "Watkins v. Rymill" (L.R., 10 Q.B., 178), and contended that from the facts it was a reasonable inference to draw that the defendant had notice of the restriction.

Mr. Justice Wills, in giving judgment, said it was true the defendant was an agent, but he would treat the case as if the defendant was himself. Halletts had a right to sell so long as the sale took place in their district. The fact that the mantles were despatched to the defendant where the defendant wished made no difference, so long as the sale took place in London. The agents had a perfect right to sell on the defendant's account as they did, and the sales were not to be limited to the defendant who happened to live in London. Therefore there was no breach of the sale. That sale carried the right to use the mantles in the defendant's district, unless he knew of the restrictions, which, at the time of the sale, would bind him. The patentee had no right to impose his own conditions, which would bind the purchaser, unless a condition was brought to the defendant's mind. It was not for the defendant to read the label he was bound by it. That was not so if the defendant had already bought the article without knowing of the restriction. It was said the defendant might have reprobated the sales if he knew the conditions, but he was not bound to do that, and his existing rights were not interfered with because he did not take that course.

The way in which the conditions were brought to the defendant's knowledge was not reasonable, and therefore he gave judgment for the defendant with costs.

WORKS FOR EGYPT.—It is stated that the Government of Egypt are about to establish a soap factory. New works in South Egypt are also rumoured.

GLOVER TOWER BRICKS.

THE following particulars about the durability of a new American brick for packing Glover towers are given by Mr. J. A. Bachman in a paper read before the American Chemical Society. The new bricks are in physical appearance and colour like the famous blue Welsh brick, and in quality rival them. Specific gravity, 1.93. Hardness, 7.5. Colour, amber blue. Fracture, blue.

		Per cent.
Silica,	SiO ₂	72.11
Alumina,	Al ₂ O ₃	20.58
Iron oxide,	Fe ₂ O ₃	5.48
Calcium oxide,	CaO	0.92
Magnesium oxide,	MgO	0.54

A whole brick placed in the bottom of a working Glover tower, acid at 62° B. and 310° F., lost as follows:—

Weight of brick	Grams.
.....	2934.22
" " at expiration of 1 week	2933.01
" " " 2 weeks	2931.92
" " " 3 "	2929.41
" " " 4 "	2928.36
" " " 5 "	2927.11
" " " 6 "	2925.26
" " " 7 "	2923.99
" " " 8 "	2922.78
" " " 9 "	2921.53
" " " 10 "	2920.05

Whole brick immersed in boiling acid gave:—

	Per cent.
66° B. sulphuric acid, 5 hours, lost	0.08
Same re-weighed	0.07
50° B. " " 5 " " "	0.06
47° B. " " 10 " " "	0.06

A piece from interior of brick immersed in boiling acid gave:—

	Per cent.
66° B. sulphuric acid, 5 hours, lost	0.15
Same re-weighed	0.07
50° B. " " 5 " " "	0.07
47° B. " " 5 " " "	0.04

The edges still remained firm and sharp.

A REMARKABLE EXPLOSION.—A serious explosion of a compressed gas cylinder occurred recently during a fire at Lebanon Pa., U.S.A. It appeared that a fire from some cause occurred in the little annexe of a mineral water works separated by a board partition from which were three carbonating cylinders. The heat of the fire caused the explosion of two of these cylinders, and the third was found with its valve broken or blown off after the fire. The first cylinder to explode blew out its bottom, passed through the side of the building and diagonally across the street, through the second story window of a double frame dwelling, through a partition separating the dwellings, through the top of a bedstead, through other partitions, and then out through the corner of the building, breaking a corner post 4 x 4 in., knocking out the weather boarding, and depositing itself in the yard. The other cylinder exploded immediately after, and was turned completely inside out, blowing out its bottom and top and tearing open a space on its side. It dropped a short distance outside of the building. The shells of these cylinders are of scant 1/4 in. material, and one of them blew out its bottom clean. One of the cylinders is said to have been marked on the top, "Tested, 3,700 lb."

A PETROLEUM CARGO ON FIRE.—An extraordinary accident occurred in the harbour at Harve recently. A vessel of 600 tons, the Heve, which had overnight been loaded with 500 casks of petroleum, had been towed into the outer harbour preparatory to leaving for Dunkirk, when a fire broke out on board shortly after midnight, caused, it is believed, by the careless use of lanterns. In spite of the efforts of the crew the fire gained ground, and at seven o'clock a tremendous explosion occurred in the forward hold, and the whole forepart of the vessel was shattered. Barrels of burning petroleum were blown high into the air, and some into the water, which was soon covered with a film of burning oil, causing the harbour to be obscured by clouds of smoke. The crew had only just time to leave the ship before she sank. Fortunately the wind was blowing off shore, so that the crew were able to make their escape. The cruiser Australia, which was moored in the adjoining basin, was not threatened, but the authorities took steps to arrange for her to leave at once in the event of the wind shifting. At eleven o'clock the fire had burnt itself out, and beyond the sinking of the steamer little damage was done except to two wooden breakwaters, which were set on fire by several barrels of burning oil that drifted against them.

Reports of Companies.

THE OAKBANK OIL COMPANY, LIMITED.

In their report for the year ending March 31st, 1895, the directors of this Company state:—

Taking into account the sum brought forward from last year, the amount at the credit of profit and loss is £2,089 19s. 6d., which the directors recommend to be carried forward.

In addition to the usual charge for maintenance the directors have found it necessary to expend, in connection with refinery department, a sum of £1,750 in renewals and extensions, and have charged same to revenue.

The buildings, plant, and utensils composing the cooperage, together with upwards of 25,000 empty barrels, were destroyed by fire at the end of June of last year, and entailed heavy loss. It has, however, been found necessary to charge Works Insurance Fund only with the sum of £849 11s. 7d.

During the strike of the coal miners the directors deemed it prudent to rebuild the whole of the retorts. The cost of same, amounting to £1,500, was partially met by the sum set aside for that purpose at the end of the previous year, and the balance has been charged against revenue.

The output from the pits had, in consequence, to be discontinued from the beginning of July till the middle of October, but the refinery department was kept almost fully employed with crude oil from other works. The difference, nevertheless, to the Company, including the cost of keeping the mines open and in good order, as well as the extra cost of fuel, is estimated at the sum of £5,000.

But for this combination of unfortunate circumstances during the year, resulting in repeated and protracted interruption to the working, the directors had hoped to earn sufficient to pay a dividend; as it is, they do not regard the result as unsatisfactory.

The works are now in a condition to deal with a considerably increased quantity of shale and crude oil, and, having regard to the cheapened cost of fuel, and to the recently increased value of liquid products, it may confidently be anticipated that the working of the year now entered upon will result in fair profit to the shareholders.

The stocks in process and on hand have been valued at the low prices current during last year.

THE BORAX COMPANY, LIMITED.

The ordinary general meeting of this Company was held last week at Winchester House, the Hon H. A. Lawrence presiding. The Chairman said they regretted being unable to recommend the payment of a dividend. To those who had followed the course of trade during the past year this result would not be surprising. With a fall of 33 per cent. in the selling value of borax, and a somewhat similar decline in the price of raw material, boracite, which it was their main business to supply, such an unsatisfactory state of things was inevitable. The reduction in prices had enabled the company to retain their old clients and to attract new ones, as was shown by the fact that in the nine months, or thereabouts, of 1894 following the reduction of prices their sales increased by 20 per cent. He thought the time had arrived to consider whether they might not reorganise the share capital account, which now consisted of £325,000 of ordinary and £675,000 of deferred shares. The ordinary shares carried a cumulative dividend of 10 per cent., and the amount now due on them was more than 44 per cent. The prospects of the deferred shareholders, therefore, were anything but encouraging. He suggested that the two classes of shareholders might be able to agree to a considerable reduction in the share capital, and so enable a large proportion of the huge sum appearing on the credit side of the balance-sheet for goodwill, boracite mines, concessions, &c., to be written off. It was apparent that the greater part of the sacrifice must be made by the holders of the deferred shares, but, considering the present price of the shares, it could not be regarded as a total loss if it brought them nearer to a participation in future profits. He had not prepared a scheme for carrying out the reduction, but he would consider the matter and consult with the large shareholders before submitting any definite proposals. He then moved the adoption of the report, which was seconded by Sir W. Guyer Hunter. Mr. Arbuthnot, who admitted that he was a borax manufacturer, complained that the policy adopted by the Company was in the interest of certain parties whose object was to limit the supply of mineral to the manufacturers of borax generally. The Chairman denied this, and refused to answer several questions respecting the working of the Company addressed to him by Mr. Arbuthnot, who, he said, was one of their competitors, and had bought a single share to enable him to attend that meeting. The report was adopted.

THE ANIMAL CHARCOAL COMPANY, LIMITED.

The annual general meeting of this company was held last week Cannon-street Hotel, E.C.—Mr. E. Rider Cook presided, and moving the adoption of the report, said that the year had been marred by two disasters—they had lost the assistance of his esteemed colleague Mr. Hart, and they had had an explosion at their premises, which done much damage to machinery and stock (*vide C.T.J.*, No. 38 130). The fire insurance companies denied their liability for resulting damage, the policies not covering the company against explosions. Long negotiations ensued, and eventually the *insure* companies consented to pay 50 per cent. of their claim. The *tra* had resulted in a loss of £3,637.—Mr. J. Sugden seconded the *mo*—In the course of the discussion, a Shareholder inquired *whic* was not advisable to wind up the company, as for the last eleven *they* had only received one dividend of 2 per cent.—The Chairman *repy*, stated that the directors had placed the accounts before *shareholders'* committee; but they did not recommend the *windu* of the company. As far as the directors were concerned, *they* indifferent to the matter; but he desired to point out that last *yea* business showed an improvement, which had been maintained *unt* explosion occurred. They were working at a profit last year, *an* for the fact that their business was stopped for six months *thrup* explosion he believed they would have shown a fair profit *durin* past year.—The report was adopted.

THE SAN SEBASTIAN NITRATE COMPANY, LIMITED.

The report of the directors to December 31st last states that the profit, including exchange £144, amounts to £12,918, to which be added £4,539. brought in from the previous year, making in *a* sum of £17,457. to be dealt with. Out of this an interim *divid* 5s. per share was paid on December 4th last, and the *directors* recommend a further distribution of 5s. per share (less tax), *payab* May 15, making 10 per cent. for the year. The balance to be *ca* forward to the next account, after deducting the amount of the *posed* dividend, will be £3,082. The contemplated purchase of *grounds* adjoining the *Oficina* Sacramento, referred to in the *report*, has been satisfactorily carried through. As regards the *thoff*, which has been shut down and not been worked for *some* past, the directors, after mature consideration, decided that *it* be to the interests of the company to dispose of the property, *therefore* accepted an offer made for it by the purchasers of *neighbouring* grounds, acquired from the Government during the *sa* sales. This transaction has enabled the directors to pay for the *grounds* in cash without encroaching on the company's working *ca*.

SAN JORGE NITRATE COMPANY, LIMITED.

The report of the directors to December 31st last, states that the profit and loss account shows a gross profit on trading for the *yea* £114,902, or an increase of over 50 per cent. on the result of *1* which was till then the largest profit ever made in any one year. *the* formation of the company. To this amount must be added *sum* of £3,975. recovered from the Nitrate Railways Company *excess* freights paid in 1893, £328 for interest, and £120. for *tra* fees, and, after providing for London office expenses, legal *cha* the difference in exchange, and income tax there remains a *bal* of £111,711. to be carried to the general balance-sheet. *Inst* £1,341. brought forward from last year, there is a sum of £113 *available* for distribution. Of this the directors declared an *int* dividend of 7½ per cent., payable on October 20th last, *and* absorbed £28,125. leaving £84,928 to be dealt with at this *me*. They now recommend to the shareholders the payment of a *fu* dividend of 12½ per cent., free of tax, making 20 per cent. *for* year, placing £25,000. to reserve or depreciation account, *whic* then stand at £38,000, and carrying forward £13,053 to next *acc*. The past year has been an exceptionally favourable one, on *acco* the high price obtainable for shipments of nitrate last *autum*; while the present position of the trade points to somewhat *h* prices this year, the directors are not without hope that the *resu* 1895, in view of the large balance carried forward, may *app*roach that of 1893, taking into consideration the fact that, *owing* to rise in exchange, a considerable profit, amounting to nearly £15,000 has been secured this year upon remittances to the London *off* money which had been earned up to December 31st last. *Durin* past year the directors have completed the sale of the *Solferino* *and* machinery to Colonel North for £10,000., and have since *sold* grounds of that *oficina* for a further sum of £5,000. to the *San* Nitrate Company; so that, after deducting the value of *Solfe* stocks included in the sale, there is a sum in hand of *upward* £12,000, in addition to the depreciation account of £38,000., making a total reserve of £50,000.

TIMATION OF SULPHUR IN PYRITES.

Interesting matter has often formed a topic for discussion, and it does not appear to be done with yet. Complete as Professor criticism of Mr. Gladding's modifications seemed, Mr. Lunge evidently thinks differently, and has made the following reply in the "Journal of the American Chemical Society": "I published last year an investigation of the several methods of determining sulphur in pyrites. (*Vide C.T.J.*, No 384, p. 191.) As a result of that investigation I rejected all other methods and recommended in the strongest terms, the general scheme published by Dr. Lunge in his "Alkali-makers' Handbook." At the same time I made a few minor modifications as conducive to greater certainty and accuracy.

In March last Dr Lunge made a vigorous attack upon each one of these modifications. (*Vide C.T.J.*, No. 408, p. 174.) The publication of his paper brings out the important fact that he admits every modification proposed is accurate in its nature with one exception. Unfortunately for Dr. Lunge, the single feature of condemnation is the one most easily capable of rigid proof as to its absolute accuracy. I shall reserve the consideration of this point and take up in order the modifications to which no objection is made.

As to the use of one gram instead of half a gram. In reply, and that by my method one gram is as easily handled as one-half, and double the accuracy is attained in consequence. He objects to the use of a bromine solution instead of aqua regia as a solvent for pyrites. This substitution was made for the reason that when using aqua regia I was annoyed by the separation of iron. Since adopting the bromine solution I have never experienced this trouble.

The most important objection is against my direction to always wash the ferric hydroxide and test the same for sulphur. He says that such procedure is unnecessary. On reading his comments, however, we find that he admits that students in his own laboratory have sometimes failed to get out all the sulphur, through neglect of washing. He further "grants that in important cases the ferric hydroxide ought to be tested in some way or another for any sulphur left behind." If the washing out of all the sulphur is so important, as he claims elsewhere, why, it may be asked, does he not do it? The concession which he makes is a confession of weakness of mind on this very point, and is all that I could ask for in my own instructions. In answer to his criticisms I will state that my washing of the precipitated hydroxide was made as he directs. Five or six washings with hot water, and finally churning up the precipitate each time has never yet, in my hands, nor in those of our assistants, completely removed all the sulphur when using one gram. When using one-half gram the danger of neglecting the very simple precaution of dissolving the ferric hydroxide in dilute hydrochloric acid and adding ten cc. of barium chloride to the filtrate.

The second objection is to my addition of the barium chloride one drop per second, to the boiling sulphate solution. He says that this method is entirely accurate, but tedious and unnecessary, taking "about an hour." In reply I will first state that this operation requires only fifteen minutes, and as it is done usually from a burette, requires no more labour than it does to add it all at once.

I further I condemn, as inaccurate, Lunge's method of adding barium chloride all at once. The following comparative tests, made in part, by our assistant, Mr. H. E. Cutts, and, in part, by myself, are very conclusive on this point. A number of samples of pyrites were treated exactly alike in every respect except the method of adding the barium chloride.

By slow addition.	By sudden addition.
Per cent.	Per cent.
50'23	50'84
51'00	51'20
51'00	51'32
51'20	51'50
39'13	39'35
39'40	39'90

For the last three samples the filtrates from the ferric hydroxide were divided into two equal portions, and one portion treated in the first method and the other in the second. Still further tests were made by dissolving and seven-tenths grams of chemically pure potassium sulphate in 100 cc. of water, adding five cc. of hydrochloric acid and then barium chloride.

By slow addition.	By sudden addition.
0'4960	0'4990
0'4960	0'5020
Theory 0'4965	0'5021

I have also taken two grams of chemically pure ammonium sulphate, thus imitating more exactly the conditions of the pyrites analysis as carried out by Lunge and obtained

By slow addition.	By sudden addition.
0'4838 gram sulphur	0'4868
0'4828 " "	0'4900
0'4834 " "	0'4888

Theory calls for 0'4848. The sudden addition of the barium chloride invariably gives results too high.

I quote the following private communication from Prof. Richards, of Harvard College, on this point. "I am much surprised to find that Lunge is ignorant of the occlusion of barium chloride by barium sulphate. This has been known for a number of decades. In 1890 it was so well known to me that I treated it as a matter of course (*Amer. Acad. Proc.*, 26, 258). This year one of my students has finished a comprehensive work upon this subject shewing the amount and circumstances of the occlusion. The paper has already gone to press in the *Proceedings of the American Academy* and the *Ztschr. anorg. Chem.* It wholly confirms your unpublished statements made to Lunge." This is strong testimony corroborating my results given above. My method of avoiding the occlusion of barium chloride by adding the barium chloride solution drop by drop and thus insuring the formation of a chemically pure granular precipitate of barium sulphate is the same as that adopted by our National Association of Agricultural Chemists in the precipitation of phosphoric acid as ammonium magnesium phosphate.

The last objection of Lunge refers to my method of estimating the 0.20 to 0.40 per cent. of sulphur that may be left in the ferric hydroxide, by the simple plan of dissolving the latter in dilute hot hydrochloric acid, adding ten cc. of barium chloride solution and letting stand over night. This he declares is decidedly wrong.

Here again I will quote from Prof. Richards' letter. "This last paper (Dr. Lunge's) seems to me to contain several errors. I think you will find that in the presence of a considerable excess of barium chloride, barium sulphate is not very seriously soluble in cold ferric chloride solutions, even when acid. Hence your method is as accurate as most analytical methods."

I wish to call especial attention to the method that Lunge has adopted to support his position on this point. He has taken four samples of pyrites and carried them through a complete analysis by his scheme and also by mine, and because his method gives 0.20 per cent. more than mine he concludes that I lose 0.20 per cent. sulphur by the solubility of the barium sulphate in the acid solution of the ferric hydroxide. No such conclusion can be fairly drawn from so unscientific a procedure. A far better plan is to divest the problem of all other possibly interfering errors and strip it down to the naked question in hand. This had been done in my first paper as follows:—

The insolubility of barium sulphate in the solution of ferric chloride thus obtained was demonstrated by dissolving 0'027 gram potassium sulphate in fifty cc. water, adding five cc. hydrochloric acid and 0'5 gram iron, precipitating hot and allowing to stand over night. We found:

1. Sulphur.....	0'0049 gram
2. "	0'0050 "
3. "	0'0051 "

The amount actually present was 0'00496 gram.

I have since repeated the above demonstration by an even more rigid test as follows: I dissolved 0'0135 gram of potassium sulphate in 100 cc. of water, adding ten cc. of concentrated hydrochloric acid, one-half gram of iron, ten cc. of barium chloride solution, precipitating hot and allowing to stand as above. The barium sulphate came down slowly, on cooling. The ignited barium sulphate was snow-white and free from iron, probably on account of its slow formation; I obtained:

1. Sulphur.....	0'0025
2. "	0'0026

The amount actually present was 0'00248.

The amount taken in these last experiments corresponds to about 0.20 per cent. sulphur calculated on one gram of pyrites. Lunge claims to have lost this amount on account of the solubility of barium sulphate in acid solution. Were he correct I should have had no precipitate whatever in my experiments above. On the contrary, I obtained the whole of the sulphur present to the one-hundredth of a per cent.

To determine sulphur in iron, Troilius, page 38, directs to "dissolve five grains in aqua regia, evaporate to dryness to make silica insoluble. To the filtrate from the silica, which should amount to at least 300 cc., a few cubic centimeters of barium chloride solution are added. After standing one night at the temperature of the room the barium sulphate is completely precipitated." Here we have ten times the amount of iron present that is contained in one gram of pyrites and yet no sulphur is lost. Had Lunge followed the safer and

more scientific plan of testing this and also each of the other points in dispute, in the same way that I adopted in my original paper, namely, by working with known amounts of chemically pure salts containing known amounts of sulphur, he would not have fallen into the errors he has.

In conclusion: Of the main modifications proposed by me, Dr. Lange admits that all are entirely correct, with one exception. The one which he claims to be inaccurate I have incontestably proven to be wholly right. I have also shown that the modification of adding barium chloride, drop by drop, is absolutely necessary for accurate results. I have also shown that the solution of the ferric hydroxide and testing the same for sulphur is certainly the safer course. I conscientiously advise my brother chemists to modify Lange's method in accordance with my instructions.

GERMAN CHEMICAL INDUSTRY.

THE Badische Anilin und Soda Fabrika, whose dividend was announced in these columns last week, state in their report that the business proved less remunerative last year than in 1893, although the volume again showed a satisfactory increase. The exports to the United States have revived, and appear to justify the hope that the crisis in that important market for the Company's products is passing away. The Russian trade presents a less satisfactory appearance; it is true that the treaty of commerce between Germany and Russia has put the coal tar dyestuff trade of the former on an equal footing with its competitors, but the Russian duties are nevertheless unfavourable to an extension of the trade, in the cheaper dyes especially. The trade to Spain, also a very important market for the Company's productions, has been adversely affected by the tariff war against Swiss, French, and English textile fabrics. The export trade to the Asiatic markets has been very satisfactory in spite of the war between China and Japan; and the offtake in Germany and other countries has been on about the same scale as in previous years. There has been no difficulty in procuring the necessary supplies of the raw materials. The higher cost of fuel has been, however, an important charge, because of the large quantity of coal consumed by the Company. Benzol has continued to be produced in increased quantities, and the price has remained tolerably steady. Notwithstanding these conditions as regards the raw materials, however, the Company has been compelled in many cases to lower the prices of its products in consequence of the increasing competition of other dye manufacturers. Certain articles, noticeably alizarine red and aniline oil, have been offered under conditions which indicate over-production. In regard to other products the development of demand has been healthy; the Company has found new markets for quite a series of dyes, and in many cases more economical processes of production have been attained. The Company has now developed an extensive trade in concentrated sulphuric acid. The works have again been considerably extended. The share capital amounts to £825,000, the ordinary reserve fund to £82,500, and the extraordinary reserve to £257,500.

NOTICES.

LONDON AGENTS

Booksellers and Newsagents may now obtain supplies of
"THE CHEMICAL TRADE JOURNAL"

From
MR. JOHN HEYWOOD,
2, Amen Corner,
Paternoster Row, E.C.

On usual trade terms.

FOREIGN REMITTANCES.

Owing to the inconvenience created by the various ways in which foreign subscriptions are remitted, we respectfully beg to inform subscribers that a *Crossed Money Order* is the most satisfactory method of remitting, both for them and ourselves. In the case of a Money Order, a letter advising us of same should always be sent, otherwise, owing to post-office formalities, much delay in tracing and acknowledging foreign remittances is inevitably entailed in this country.

ARTIFICIAL WHALEBONE—Artificial whalebone has recently been made in order to supply the place of the real article, the price of which has risen to a fabulous height. The Munck process is employed. A raw hide is treated with sulphide of sodium, and, after the hair has been removed, it is immersed for 24 hours at least in a solution of sulphate of potash. It is then stretched on a frame. The drying goes on slowly and in daylight. After it is complete, the hide is exposed to a high temperature, and then submitted to a strong pressure which gives it almost the strength and elasticity of genuine whalebone.

Trade Notes.

BAD FOR BACTERIO-SEWAGE TREATMENT.—The Scott Moncrieff Sewage Scheme, at Towcester at all events, has been dubbed a fiasco. It should, however, be stated that Mr. Scott Moncrieff represents the blame rests with the local authorities. The filter beds are to be removed, as, according to the Sanitary Inspector, they are now danger to the health of the town.

CALCUTTA LINSEED.—The Calcutta linseed market has, it is reported, been very peculiar this season, exporters being conspicuous by their absence. Native dealers are said to have made a "run" the shortness of the crop having favoured these tactics, and they have been asking such excessive prices that exports have been practically stopped.

NITRATE STATISTICS.—The permanent Nitrate Committee's preliminary circular for May states:—Nitrate of soda—Total exports Europe, April, 1,685,000 quintals; loading for Europe, May, 1,700,000 quintals; imports, Europe, April, 182,880 tons; delivery in Europe, April, 190,480 tons. Visible supply, Europe, May: Stocks and afloat, 294,000 tons.

PRESIDENT OF THE ROYAL AGRICULTURAL SOCIETY.—The nomination of Sir Walter Gilbey to the office of president of the Royal Agricultural Society of England, in succession to Sir John Thorneycroft, whose year of office expires next month, has given much satisfaction to stockbreeders in all parts of the country. Few men have worked harder, and none more successfully, than Sir Walter Gilbey in endeavour to improve our native breeds of stock, particularly of horses.

GOLD PRODUCTION.—The Mysore Gold Mining Company report for April as follows:—5,520 tons of quartz produced 4,581 ounces of gold; 2,925 tons of tailings produced 559 ounces of gold; 1,795 tons of tailings (cyanide process) produced 338 ounces of gold; total production for the month, 5,478 ounces. Tailings short from scarcity of water. The Orion Gold Mining Company report that last month's crushings yielded 3,070 ounces, from plates 620 ounces, and in cyanide 2,450 ounces of gold.

COMMERCIAL FIBRES.—Dr. D. Morris, in a series of Cantor Lectures before the Society of Arts, when reviewing the fibres of the palm or recently drew attention to the remarkable vegetable substance, resembling whalebone in strength and elasticity, called *basa* or *pilusa*. This was extensively used for making brooms and brushes, and consists of the indurated fibre bundles thickly clothing the stems of palms. The fibres yielded by the husk of the coconut were of considerable commercial importance. They afforded material for brushes, mats, matting, cords, ropes, and tow. Coconut refuse, on account of its wonderful properties of absorbing moisture, had been recommended for use as a backing material for steel plates in the construction of men's war. Of all vegetable substances the most noted substitute for hair was the fibre of the Spanish moss (*Tillandsia usneoides*). This plant grew in long, hanging tresses on cypress trees in the swamps of the Southern United States. The supply of material for paper-making was becoming more dependent on wood pulp. The lecturer concluded the course by discussing in some detail, problems connected with the introduction of new fibres, the improvement of fibre plants by systematic selection and cultivation, and by a general review of the methods hitherto adopted by mechanical and chemical means for the extraction of commercial fibres.

THE GROWTH OF AGRICULTURAL SCHOOLS IN THE UNITED STATES.—A very gratifying announcement is that of the opening recently of a well-equipped agricultural school at Kensico, in Westchester County, N. Y. The school has been established and will be maintained by a private bequest, and is to be known as the "Benjamin Franklin Memorial Training Farm." The building which is to shelter the young farmers is three storeys in height, built in the old colonial style of architecture, and is large and roomy enough to accommodate 100 students. A number of earnest young men have been enrolled, and the work gives every promise of being highly successful. In this connection it will be interesting, perhaps, to note the progress of similar institutions throughout the country. In 14 States schools devoted to this special work are maintained for both white and coloured students. The total number of institutions offering courses in agriculture is 56. In these institutions the college course leading to a degree in agriculture extends over a period of three or four years, while there are shorter courses in dairying and similar work, which cover only a few months. Besides these there are courses of lectures on agriculture given in various localities by members of the faculties of these colleges. These courses are particularly popular. Some idea of the extent of this work may be gained from the following figures taken from the United States agricultural report. The total number of the professors in the faculties of these several colleges numbered in the past year 1,282; the total number of students, 17,623; the total revenue of these institutions for the year was \$4,024,132; and the value of additions to their equipment is placed at \$1,481,637.

FLASH POINT OF BURNING OIL.—At the last meeting of the Chamber of Commerce the Secretary reported that he had been in communication with some Glasgow and Bristol firms upon the raising the "flash point" of burning oil, but he had been informed by the Bristol, West of England, and South Wales Petroleum Association that, in the opinion of that body, no further legislation as to the flash point of petroleum was required. The Council of the Chamber resolved to endorse the opinion it expressed upon the subject.

There are none so blind or ignorant as those who do not see or know.

STRALSUND PETROLEUM TRADE.—During a period of about three years, 1893 was, Mr. Vice-Consul Rose says, the first year in which petroleum was not imported into Stralsund direct from America, but from Stettin. The reason of this circumstance is, that the Standard Oil Company, of New York, has erected tanks at important places in the North Sea and Baltic, so that it is impossible for those firms, who were hitherto importers, to buy petroleum in barrels direct from America. The price has fallen lower and lower, and at last came to the lowest point since the time that petroleum was first introduced into

CEYLON.—The demand for manure in Ceylon is a large one, inasmuch as it indicates that cultivators are alive to the fertility of the soil must be maintained. Apart from the commercial fertilizers such as bone dust, castor cake, &c., there is a good market now for fish manure, imported and locally produced blood from the Colombo slaughter-houses and night-soil. Kandy are also being utilized. Of late people from South Ceylon have been going about offering such substances as cattle manure, goat droppings, dry goat and sheep manure, and even ashes—all from the neighbouring coast. The prices demanded per ton for the first, Rs. 2.50 for the second, and Rs. 1.50 for the third.

LEONHARDT AND CO.—This firm announces that they are able to reduce the price of the Curcumine S yellow to 1s. 6d. per lb. Fastness to light on cotton is not surpassed by any other dye, and that its mode of employment is both easy and economical. It is 10 to 100% of common salt reckoned on the weight of dye required according to depth of shade, with the addition of 1 lb. of acetic acid per 10 gallons of bath, finishing dyeing at from 195 to 210° F. in 1/2 to 1 hour. Wool is dyed in an acid bath and the dyes are not only fast to light, but also fast to washing. S shows the same good qualities on silk and half-silk and on its fastness to light it is specially adapted for the dyeing of

IN PEAS.—At Liverpool last week a vendor was fined for selling peas containing copper. Defendant purchased the peas from a pease-packer, a nut and banana salesman, of 23, Queen-square, but before doing so had produced to him a certificate not in accordance with the Act, and calculated to mislead and induce him to purchase. That certificate was headed, "56, Hanover-street, Liverpool, and bore a heading Evans, Son and Company, Laboratory, and M. Coaroy, F.C.S., chemist. It represented that the peas were of the Gram Brand of peas, or a sample purported to have been taken from them, was free from copper. Defendant, upon the faith of the certificate, purchased the peas. That certificate was not a protection under the Act for shopkeepers—namely, said that other cases had been before them of selling peas. Defendant had been misled; but the bench would not say so. It would be much better for shopkeepers to buy English peas instead of foreign ones. They hoped it would be a warning to other shopkeepers.

PULP via THE CANAL.—During April the arrivals of this pulp at the Manchester docks were greater in volume than in any other month, no fewer than 52,243 bales having been discharged by the ship from Norway, Sweden, Canada, and Newfoundland. The last eight months indicate a rapid and steady growth, the arrivals in January and February being attributable to the closing of the ports by ice. For the week ending May 1 the imports amounted to 3,408 bales, but even this low figure compares favourably with the total of 790 bales which were landed at Liverpool in the same period. A large proportion of this trade has been imported from the east coast ports, and in order to regain some of the trade the Wilson line has announced a reduction of the freight on pulp from Christiania to Hull from 7s. 6d. to 4s. 6d. per ton. The pulp can, therefore, now be landed at that port at 42s. 6d. per ton, against 45s. 6d. at London or Manchester; but the closer proximity of the Ship Canal docks to the mills consuming the bulk of the imported means a saving in inland carriage of more than 100 tons which would be saved in sea freight via Hull. The teamers are now on passage or fixed for Manchester with the following names:—*Palomares, Panther and Rolf*, from Christiania; *Courier*, from Sweden; and *Rose* from Hango.

THE OAKBANK OIL CO., LIMITED.—The tenth annual meeting of this Company will be held on Wednesday, 15th inst., at 200, Buchanan street, Glasgow, at 12 o'clock noon, when the directors' report and the balance-sheet will be submitted.

DISCOVERY OF TELLURIDES.—A discovery has been made of telluride of bismuth, which is very rare and invariably associated with gold, as in this instance. The property is under offer for London.

COLLAPSE OF THE CHARLEROI GLASS STRIKE.—A large number of glass workers who have been on strike at Charleroi returned to work on Saturday last. It is expected the strike will terminate in a fortnight.

"OLEO-CHEESE."—Before the House of Commons Committee on Food Products, last week, Mr. J. R. Webb, of Hibernia Wharf, London, told a disquieting tale of skim-milk cheese, worked up with a mysterious substance called "oleo" and lard. The compound, it seems, is sold as the genuine article. One way of detecting it is by rubbing a piece between finger and thumb, when the different constituents become separated. Mr. Cecil Howson, a Liverpool broker, who gave similar evidence, suggested that a Government department should be charged with the suppression of the trade.

SOCIETY OF CHEMICAL INDUSTRY.—The Liverpool Section held its last meeting of the present session at University College, on Wednesday, 1st inst., under the chairmanship of Mr. Eustace Carey, about forty members being present. Dr. C. A. Kohn gave a demonstration on the properties and laboratory preparation of nickel carbonyl, the interesting compound of nickel with carbonic oxide, which was brought before the world some time ago by Mr. Ludwig Mond, who is erecting nickel works on this method of separation near Birmingham. A paper was then read by Dr. Hurter on the "Efficiency of Electrolytic Apparatus." This paper, dealing with one of the most absorbing topics of present-day industrial chemistry, evoked considerable comment and a warm discussion on the question of electrolytic cells. The sittings of the Section are now suspended until November, when they will be resumed under the chairmanship of Dr. Gustaf Schack-Sommer.

EXHIBITS AT THE ROYAL SOCIETY CONVERSAZIONE.—Among the various exhibits of interesting apparatus, etc., the platinum exhibits of Messrs. Johnson, Matthey, and Co. attracted some attention, including, among other things, a platinum nugget of 158oz., a palladium ingot of 1,000oz. (valued at £7,000.), and a rhodium ingot of 72oz. Still more attractive, as might be expected, were the spectra of argon and helium mixed with argon, exhibited by Professor Ramsay, F.R.S. There were shown in a curtained recess the spectrum of argon extracted from air, and also the spectrum of a mixture of argon and helium extracted from cleveite, a Norwegian material. The sodium flame was made visible so as to show the non-identity of the D₂ line of helium with the D₁ and D₂ lines of sodium. Professor V. B. Lewes's experiments with the combustion of acetylene for illuminating purposes gave results of astounding brilliancy. The ingenious arrangement termed the "hydrogen wall," exhibited by Mr. L. Pyke, should be valuable to those interested in electrolytic work. By this method an increased efficiency in the reduction of the highly electropositive metals from aqueous solutions is obtained. The discovery should be useful for the commercial production of electropositive metals, such as sodium, potassium, and aluminium.

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzols are flat at 1s. for both 90's and 50/90's. Carbolic acids are firm, both crystals and crude being active: Crude, 60%, is quoted 1s. 8d., and 40% crystals 6 3/4 d. per gallon. Crude naphtha is unaltered, but solvent is easier at 1s. 1d. Anthracene is inclined to weakness at 1s. 0 1/2 d. for 30% A, and 9 1/2 d. to 10d. for B. Creosote is easier at 1 1/2 d. Pitch is dearer, being quoted 35s. 9d. f.o.b. East Coast.

Sulphate of ammonia is much stronger, the demand having been greatly improved. In consequence there has naturally been a sudden accession in prices, sales having been actually made for £10. at Hull. The demand has probably been largely due to speculators having been compelled to cover themselves. The effect upon the stocks, however, has affected the position beneficially. Quotations are:—London outside makes £9. 17s. 6d., Liverpool £9. 17s. 6d. to £10., Hull £10., and Leith £10.

REPORT ON MANURE MATERIAL.

There has been a dragging market throughout the week, both for prompt and forward delivery, buyers having about completed their purchases for the present season, and being in no hurry in regard to

next. The quotations for mineral phosphates remain unchanged, and sellers of high grade rock are firm at their prices, but for the lower grades, 55/60% and 60/65%, sellers show a disposition to meet buyers in regard to prices for large lines. There is nothing fresh to report in River Plate bones, but £4. 5s. per ton would probably be business for summer shipment. £4. 5s. per ton, ex quay Liverpool or Hull, is about the value for crushed East Indian bones, for shipment, and this price would do for Bombay bone meal in the same position. On spot bone meal is scarce, and worth £4. 10s. to £4. 12s. 6d. per ton, ex quay Liverpool. Nitrate of soda is quiet in all positions. On spot refined quality may be had at 8s. per cwt., and ordinary at 7s. 10½d. per cwt. Arrived at port of call cargoes have been selling at about 7s. 9d. per cwt.

LIVERPOOL MINERAL MARKET.

Our market this week has been fairly good, with a firm tone; the demand is better, with prospects of further improvements. Manganese: There is practically no arrivals to report this week, whilst sales have increased, but prices remain unaltered. Ground manganese continues steady without alteration in figures at £6., £8., £10., and £12. 10s. per ton, according to quality. Manganiferous iron ore continues steady without any alteration in prices. Bauxite is in increasing demand, particularly for Irish Hill brand, for the manufacture of alumina, and prices are firm at 20s. per ton for first quality, 16s. per ton for second quality, and 12s. per ton for third quality, f.o.b., in cargoes. Chrome ore is in strong demand, whilst arrivals are slow, and prices are therefore firm at 70s. per ton for 40% and 110s. to 115s. per ton for 50% ore. French chalk: Importations have increased, but the demand is equal, and it has all gone direct into consumption; prices are, consequently, firm at 70s., 80s., 90s., and 110s. per ton for "Angel White" and "Gold Medal" qualities. Tungsten metal and alloy are firm at 1s. 10d. to 2s. per lb. Chrome alloy, 20% to 25%, £20. per ton. Plumbago is in good demand for foundries' and lubricating purposes, at £5. and £6. per ton, better qualities at higher prices. Arsenic is quiet at £16. per ton. Barytes: Carbonate is easier at unaltered prices; sulphate is in good demand for both the lump and powdered, with an advancing tendency. China clay is in fair demand at unaltered prices. Bog ore: There is a strong demand for contracts, and prices are firm at about 22s. 6d. per ton. Rottenstone: £10. to £15. per ton, according to quality. Pumice stone: ground, £8. 10s. per ton; selected lumps about £12. 10s. per ton. Red oxides: 7s. 6d. to 15s. per cwt., according to quality. Ochre and umbers are quiet. Fullers' earth 50s. per ton for good lump, 80s. for powdered. Feldspar is steady at 35s. to 45s. per ton.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron, easy: Scotch warrants closed at 43s. 7½d., Middlesbrough 35s. 6d. cash, and hematite 43s. 10d. Copper, steady: Chili bars, G. O. B.'s and G. M. B.'s closed at £42. to £42. 5s. cash, and £42. 8s. 9d. to £42. 13s. 9d. three months. Tin, firmer: Straits closed at £64. 15s. to £65. cash, and £65. 5s. to £65. 15s. three months; Australian, £65; English ingots, £68. 10s. Lead, steady: Spanish, £9. 17s. 6d.; English, £10. to £10. 2s. 6d. Silesian spelter: ordinary, £14. 7s. 6d. Nickel, 1s. 2½d. Antimony, £31. Quicksilver: first hands, £7.; second hands, £6. 18s. Copper shares, firm: Cape, 1½ to 1½; Copiapo, 1¼ to 1¾; Libiola, 3½ to 3½; Mason and Barry, 2½ to 2½; Rio Tinto, 15¼ to 16; Tharsis, 4½ to 4½.

GLASGOW, WEDNESDAY.—Market steady, with good business. Scotch done at 43s. 7½d., 43s. 7d., and 43s. 7½d. cash, also at 43s. 9d. one month, closing with buyers at 43s. 7½d. cash, sellers ask 43s. 8d. Cleveland done at 35s. 6d. cash, also at 35s. 8½d. and 35s. 8d. one month; closing with buyers at 35s. 6d. cash, sellers ask 35s. 7d. Cumberland hematite done at 43s. 11d. and 43s. 9½d. cash, also at 44s. 2½d., 44s., and 44s. 1d. one month, closing with buyers at 43s. 10d. cash, sellers ask 43s. 11d. Middlesbrough hematite closes with buyers at 42s. 5d. cash, sellers ask 42s. 6d.

MISCELLANEOUS CHEMICAL MARKET.

In the alkali trade business is fairly good all round, especially for export, but no improvement is yet recorded in values. Alkalies all round have been without any movement during the week. Ammonia alkali £2. 17s. 6d., bags, makers' works, and £3. 5s. to £3. 7s. 6d., casks, f.o.b. Caustic soda unchanged, and current quotations are as follows:—F.o.b. Liverpool, 77%, £9. 7s. 6d.; 74%, £8. 7s. 6d.; 70%, £7. 10s.; 60%, £6. 10s.; cream, 60%, £6. 7s. 6d. nett per ton, 10-ton

lots and upwards. Soda crystals dull at 35s. to 37s. 6d., bag. For bleaching powder the demand is fairly good, and price change at £7. per ton, free on rails makers' works, and £7. £7. 10s., f.o.b. Chlorates, potash and soda, 4½d. and 6½d., respectively. In sulphur there is no improvement, prices are £3. 12s. 6d. per ton, makers' works. Sulphate of copper is a market at £15. 15s., f.o.b. Acetate of lime: brown, £5. £5. 12s. 6d. per ton, c.i.f.; grey, £8. 10s. to £8. 15s. Foreign white acetate of lead £24. 10s., c.i.f. For white arsenic there is a fairly active demand, and price firm at £14. nett, Garston. The price for carbolic crystals, 39/40%, has advanced further to 6½d., and the market has a firmer tone. Yellow prussiate of potash still offers at 8d., and even a low would be taken for good lines. Sulphocyanides are quiet. Caustic and carbonate, is firm in price, and there is a good demand both for spot and forward delivery. Nitrate of soda rather at the spot at 8s. 4½d. per cwt. There is no indication as yet material improvement in the trade generally.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, THURSDAY

Sulphate of ammonia, after apparently touching bottom, at time, at the low mark of £9. 5s. prompt f.o.b. Leith, has change towards recovery, and to-day one maker reports having for £9. 10s., and got that improvement in price. The market more hopeful.

The burning oil boom in the mineral oil and paraffin section of the industry continues in a sort of way, but the consumptive season is over, and there are few, if any, purchasers to deal with. Hence the makers stick to their advance of 3d., that is, to Scotch buyers regards English sales they have had to climb down a little, these now open to be done at 1d. lower than the Scotch price. Returning to the old distinction so long maintained, and recently ruptured for little more than a fortnight at the most. Three mineral oil companies have declared results for the year ending 31st. The Broxburn pays 5 per cent. on ordinary stock, due good values for sulphate of ammonia got over the first half financial year. The others pay nothing, but avoid making any loss.

General chemicals continue to get a little firmer, though very withal. No change of any note in values.

Chief prices current are:—Soda crystals, 35s. nett, soda ash, 48/52°, £3. 15s. to £4. 5s. nett, Tyne; white 48/52°, £4. 10s. to £5. 5s. nett, Tyne; alum in lump, £5. 10s. Glasgow; caustic soda, white, 74° £9. 70/72° £7. 15s.; £6. 15s., and cream 60/62° £6. 10s., all nett, Liverpool; ble powder, £6. 5s. to £7., nett, Tyne; saltcake, 17s. 6d.; borax, refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate soda, 5-cwt. casks, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries export, 4¼d. nett, f.o.b. Glasgow; bichromate of soda, 3½d. nett, Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 4¼d. less 5%, Liverpool; nitrate of 8s. 4½d.; sulphate of ammonia, £9. 10s., prompt f.o.b. salammianic, first and second white, £39. and £37. nett, at sulphate of copper, £15. 10s., less 5%, Liverpool; paraffin acid 2½d.; and soft, 1½d. to 2½d. per lb.; paraffin wax 120° semi-2½d. to 2¼d.; paraffin spirit (naphtha), 5d. to 6d. per lb.; paraffin oil (burning), No. 1, 7½d. and crystal 7¼d. at west Scotch buyers (English sales 1d. lower); ditto (lubricating) £4. 5s.; 88s° £4. 10s. to £5., and 890/895° £5. to £5. 10s. Imports of sugar at Greenock were 16,205 bags beet unrefined bags beet refined, and 23,940 bags unspecified.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY

OILS.—Palm oil keeps quiet, with only a small business done. Few sales have been made in Congo at £20. per ton. Olive is steady, and despite the firmness of prices, is experiencing an inquiry. Linseed keeps firm, Liverpool makes in export sales quoted 20s. 9d. to 21s. 6d. per cwt., holders being steady. Cottonseed is rather quiet, but steady at 18s. 3d. to 19s. per cwt. Liverpool refined and 18s. to 18s. 3d. per cwt. for American. Oil is steady on spot without change in prices: Good seconds Col being quoted 2½d. to 2¼d., and first pressure French 2½d. 10 per lb. Sales of the latter have been made ex store at 2¼d. It is rather quieter, but prices are unaltered. Rosin is in good import full rates, "F" being scarce. Spirits of turpentine are a shade being quoted 22s. 9d. per cwt., at which holders are now. Petroleum much quieter, and easier in price: American, 5¼d. according to quality, and Russian refined 5¼d. per gallon.

URS are steady, without alteration in prices. Oxfordshire, common, £10., medium, £12., best, £15. ire, common, 40s.; medium, 50s., best, 60s.; Welsh, best, 60s., and common, 18s.; Irish, Devonshire, 40s. to 60s.; J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Umber: quiet; Devonshire, 50s. to 55s. White lead, £16. Red lead ed. Venetian red, £6. to £10. Cobalt: Prepared oxide, black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2, Oxide of iron: Common, £7.; medium, £10.; finest, £20. de, £22. 10s. to £25.

LL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

Business continues active. The following is a return of is of seed in Hull:—Linseed, 1,009 qrs. 30th April, 1,486 March; rapeseed, 500 qrs. 30th April, 6,023 qrs. 31st March, ed, 2,534 tons 30th April, 3,405 tons 31st March. The imports for the month have been:—Linseed, 6,755 qrs., against rs. ending March; rapeseed, 6,750 qrs., April, against 4,951 rs. March; cottonseed 9,264 tons April, against 17,190 tons March. Linseed oil a strong market, 19s. 3d. paid, spot; g., 19s. 4½d., last four months 18s. 9d.; boiled and refined, 1. 10s. per ton extra. Cotton oil unchanged, and steady: spot 15s. 3d.; refined, 16s. 7½d. naked, spot; May-Aug., 14d.; Nov.-April 17s. 6d.; barrels 27s. 6d., and casks 17s. 6d. extra. Castor oil, 2¼d. per lb for first pressure. Rape oil demand, and firmer. Spirits of turpentine, 23s. 3d. per cwt. scarce, £17. to £20 per ton. Sod oil very scarce. Soft soap, per cwt. Liquid scouring soap for wool dressing, £16. per cool oil, £16. per ton. Boiled drying oil, £12. per ton. ES.—A rapidly diminishing demand for all kinds, there being in pasturage, with the promise shortly of a heavy growth of od. Linseed cakes, dull: 95% pure, £5 17s. 6d. per ton; 5, £5. 12s. 6d.; Germans, £5. 15s. Oil cakes, £5. 2s. 6d. cakes in small demand: best makes, £3. 15s.; seconds, £3 0 3. 10s. Rape cakes unaltered. TS.—In a regular and steady demand. Prices unchanged bite and red lead and oxide of zinc unchanged. Venetian red £4. per ton; in oil, £11. per ton. Yellow ochre dry from ; in oil, £11. per ton. Ultramarines from 3d. to 8d. per lb. mixed paints: Prices very much cut up from £24 per ton. mover, 25s. to 30s. per cwt. Black varnish £5. 10s. per ton ls. Vermilionettes from 4d. to 9d. per lb. Oak varnish, per gallon.

TYNE CHEMICAL REPORT.

TUESDAY.

icals are quiet, but the shipments are a little better, and stocks . There is no alteration to report in prices. High strength in fair demand at £9. 10s. for 76/77%; 70%, £7. 15s. per ton. ystals, locally, £1. 16s. 6d. per ton, gross weight. Business is a shade better. The first steamers for the Russia Baltic ports ing this week. hing powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, istic soda, 76/77%, £9. 10s. per ton, nett; do., 70%, £7. 15s. nett; recovered sulphur, 2 cwt. bags, £4. 5s. per ton, nett; h., 48%, £3. 15s. per ton, nett; do., 52%, £4. 2s. 6d. nett; do., 56%, £4. 10s. per ton, nett; alkali, 36%, £2. 15s. nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. ton, nett; do., 52%, £5. 5s. per ton, nett; hyposulphite of 7 cwt. casks, £6. per ton, nett; do., 1 cwt. kegs, £6 12s. 6d. nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; 10° Tw., £3. per ton, nett; do., 140° Tw., £3 7s. 6d. , nett; soda crystals, casks, £1. 16s. 6d. per ton, weight; do., 2 cwt. bags, £1. 16s. 6d. per ton, nett; of potash, 5¼d. per lb., less 6%; pearl hardening, r ton, nett; pure white sulphate of alumina, £4. 2s. 6d. nett; blanc fixe, £7. 10s. per ton, nett; chloride of barium, s. per ton, nett; carbonate of alumina, £28. 15s. per ton,

nett; aluminate of soda, £33. 15s. per ton, nett; in 5 ton lots, £28. 10s. per ton, nett.

SALT.—South Durham salt is steady at from 9s. to 9s. 6d per ton, f.o.b. Tees.

COALS remain fairly steady in price, and some large Metropolitan contracts for gas coals have recently been closed. Bunker coals are in rather better request, but as there is abundant supply, price is not affected. Coke is in better demand. To-day's quotations are:—Best Northumbrian steam, 8s. 9d. per ton; second qualities, 7s. 9d. per ton; small steam, 3s. 9d. to 4s. per ton; gas coals, easier, 6s. 3d. to 6s. 9d. per ton; Bunker coals, 6s. 6d. to 7s. per ton; coke, steadier, 12s. 6d. to 13s. 6d. per ton.

New Companies.

Derby Vinegar Brewery Company, Ltd.—CAPITAL £3,000., in shares of £1. each. This company has been formed to acquire and carry on the vinegar brewing business of W. Higginbottom, Wood-street, Derby.

Mann and Sons, Ltd.—CAPITAL £5,000., in shares of £1. each. This company has been formed to acquire and carry on the white metal and oil and colour dealing business of Messrs. A., A. D., and E. H. Mann, of Worcester.

The Patent List.

This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

Supplying Air Artificially to Furnaces. J. J. Meldrum, T. F. Meldrum, and J. W. Meldrum. 7,938. April 22.
Extracting Metals from Sulphide Ores. H. R. Angel. 7,975. April 22.
Manufacture of Sulphuric Acid from Low or High Grade Sulphur Ores. H. R. Angel. 8,099. April 24.
Treating Animal Blood for Manurial Purposes. R. T. Savage and E. G. Walker. 8,101. April 24.
Preventing Boiler Incrustation. W. Griffiths and J. W. Curry. 8,129. April 24.
Imitation Leather. H. Schmiedel. 8,215. April 25.
Manufacture of Fertilizers. A. A. Dickson. 8,232. April 25.
Treating Garbage. A. A. Dickson. 8,234. April 25.
Machine for Compacting Soap. M. Perls. 8,311. April 26.
Manufacture of Bicarbonate of Soda. J. Brock and J. Hawliczek. 8,314. April 26.
Improvements in Anglo-American Oil Presses. G. E. Selby. 8,323. April 26.
Treating Silver, Lead, Zinc, and Cobalt Ores. C. Hoepfner. 8,328. April 26.
Treating Ammoniacal Gas Liquor, etc., and Obtaining Useful Products. H. Bower. 8,330. April 25.
Treating Bine in Manufacture of Salt. J. Todd. 8,324. April 27.
Extracting Gold and Silver from their Ores. A. Schmidt. 8,376. April 27.
Manufacture of Prussiates. H. Bower. 8,381. April 27.

Gazette Notices.

PARTNERSHIPS DISSOLVED.

E. MORRIS and J. H. TUTTON, candle manufacturers, and grease, tallow, and oil merchants, Shrewsbury and Ellesmere, under the style of Morris and Tutton.
J. HUMPHRIES and G. A. WEALL, manufacturing and wholesale chemists and drysalters, Bradford, under the style of Humphries and Co.
H. W. WATSON, jun., and W. WATSON, drysalters, oil merchants, and commission agents, Sunderland, under the style of H. W. Watson jun., and Co.

BANKRUPTCY ACTS, 1883 and 1890.

Adjudications.

CLOUGH, ARTHUR late Leeds, now Stanningley, near Leeds, soap manufacturer.
FOWLER, GEO. HATCHER, Uplyme, Devonshire, lime merchant.

IMPORTS OF CHEMICAL PRODUCTS

AT

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

ending April 27th.

Acid—

3 p kgs. Burrell & Co.
50 Phillips & Graves

130 A & M Zimmermann
Acetone—
Holland, 4 p kgs. G. Rahn & Co.
Germany, 21 Ryley & Co.

Acid Phosphate—

U States, 100 p kgs. Seaward Bros.

Alum—

Holland, 70 p kgs. Ohlenschlager Bros

Aluminium—

Germany, £60 C. Tennant, Sons & Co.

Ammonium Nitrate—

Germany, 1 p kgs. Petri Bros.

Aniline—

Holland, 5 p kgs. L. C. & D. Rly.

Antimony—

Japan, 5 t. L. & I. D. Jt. Co.

Arsenic—		Austria, 200		Magnesium Chloride—		Potassium Cyanide—	
Germany, 50 pags.	Burgoyne & Co.	Germany, 2	A. J. Humphery	Germany, 5 pags.	Burrell & Co.	Germany, 10 pags.	Beresford & Co.
Asbestos—		Denmark, 4	L. & I. D. Jt. Co.	Manure—		Potassium Sulphate—	
Italy, 4700	London Asbestos Co.	France, 49	Bailey & Leatham	France, 1 t.	Bennett S. S. Co., Ld.	E. Indies, 38 pags.	L. & I. D. Jt. Co.
Germany, 7	Craven & Co.	" 62	L. J. Levinstein & Sons	Germany, 50	Perkins & Homer	Pumice Stone—	
France, 7	Mory & Co.	" 50	B. & F. Wf. Co.	Sweden, 51	Anglo-Swedish Co., Ld.	Italy, 7 t.	O'Hara & H.
Italy, 270	L. & I. D. Jt. Co.	Gambier		Germany, 10	Anderson, Weber & Smith	" 30	H. & N. Wills
Barytes—		E. Indies, 569 pags.	E. Boustead & Co.	Belgium, 15	Cartledge & Batchelor	Rosin—	
Belgium, 21 cks.	P. Jantzen	" 265	Brinkmann & Co.	E. Indies, 50	A. Hunter & Co.	U. States, 3,419 bbls.	Prod. Bakery
" 27	J. L. Lyon & Co.	" 340	Beresford & Co.	" 993	Fox, Roy & Co.	" 7,000	F. & S. Chishman
Holland, 23	O'Hara & Hoar	" 528	L. & I. D. Jt. Co.	" 300	F. A. Hodgkinson	Salicylates—	
" 9	Greiff & Co.	" 94	W. H. Mitchell	Germany, 95	F. W. Berk & Co., Ld.	Holland, 10 pags.	J. Barber & Co.
" 137	W. Harrison & Co.	" 240	J. Greig	Methyl Alcohol—		Saltpetre—	
Belgium, 69	Soudy & Sons	" 241	Union L. Co.	Germany, 16 pags.	Lister & Biggs	Holland, 4 cks.	Peter J.
" 105	W. Harrison & Co.	E. Indies, 9 cts.	Thomasset & Co.	Belgium, 8 dms.	H. Lorenz	" 18	P. Hecker & Co.
Germany, 20	Steinhoff, Sons & Co.	" 25	F. Huth & Co.	Mica—		Germany, 1,000 bgs.	C. Winkler & Co.
Bromine and Bromide of Iron—		" 11	Langstaff & Co.	Adelaide, 4450	F. Braby & Co.	E. Indies, 1,101	Lucas & Spencer
Germany, 75 pags.	A. & M. Zimmermann	" 50	J. Owen	Ceylon, 124	"	Soda Ash—	
Caoutchouc—		" 76	Stansbury & Co.	U. States, 50	"	Holland, 2,000 c.	R. W.
E. Indies, 46 c.	Elkan & Co.	" 4	Patry & Pasteur	China, 75	W. M. Smith & Sons	Sodium Sulphide—	
" 86	L. & I. D. Jt. Co.	" 70	L. & I. D. Jt. Co.	E. Indies, 495	"	Belgium, 20 pags.	H. Wallace & Co.
France, 38	"	Logwood		Molasses—		Starch—	
E. Indies, 60	E. Boustead & Co.	Honduras, 264 t.	W. Shelcott	Egypt, 9 000 cks.	43,000 c.	Holland, 437 pags.	Little & John
Aden, 8	Clarke & Smith	B. W. I., 134	I. & I. D. Jt. Co.	B. Guiana, 20	Francis & Co.	" 57	Phillips & Graves
Germany, 32	"	Madder		U. States, 500	C. Tennant, Sons & Co.	" 918	Taylor & Co.
France, 30	S. Figgis & Co.	Holland, 1 pkge	Phillips & Graves	B. W. I., 100	J. Newcombe	Belgium, 840	Sawyer, Sons & Co.
Zanzibar, 10	Prop. Bull Wf.	Myrabolams		" 2,005	Blyth, Green & Co.	" 100	Arnati & Hani
Rangoon, 66	L. & I. D. Jt. Co.	" 1,969	J. P. Alpe & Co.	Naphthaline—		France, 40	A. D.
" 386	R. G. Hall & Co.	" 670	Whistable S. Co.	Germany, 3 pags.	W. G. Blagden	Germany, 151	Phillips & Graves
Ceylon, 1	"	" 350	Darling Bros.	Nitre—		Belgium, 530	T. H. J.
" 1 qtly.	"	" 1,000	P. & O. Co.	Chili, 14,747 bgs.	W. Montgomery & Co.	" 200	Taylor & Co.
Castor Oil—		" 1,366	J. Owen	Ochre—		" 140	F. Chapman & Co.
France, 13 cks.	F. Boehm	" 200	Prop. Sun. Wf.	U. States, 250 bbls.	Lon. & Kirk S. Co.	Stearine—	
" 43 pags.	Beresford & Co.	Orchella		Holland, 4 pags.	Phillips & Graves	France, 18 cks.	Ross & Darr
" 39	A. Howden & Co.	E. Indies, 63 pags.	Hoare, Wilson & Co.	France, 68 cks.	Hay's Wf	" 150 bgs.	Waltman & Toss
E. Indies, 100	Lewis & Peat	Shumac		U. States, 55	Taylor Bros.	Strontium Carbonate—	
Belgium, 38 bbls.	Fuerst Brs	Italy, 500 pags.	Harris Brs. & Co.	Belgium, 9 cts.	F. Claydon & Co.	Holland, 24 pags.	Illies & Sank
E. Indies, 100	L. & I. D. Jt. Co.	" 500	Beresford & Co.	France, 4	Tingle, Jacobs & Co.	Tar—	
Cellulose—		Tanner's Bark		U. States, 2,342	Anglo-Am. Oil Co.	U. States, 600 bbls.	Lucas & Spencer
Germany, 8 bbls.	T. H. Lee	U. States, 17 t.	Lindsay, Bird & Co.	Holland, 3	"	Holland, 3	W. L. J. O.
Chemicals (otherwise undesignated)		Natal, 33	A. & W. Nesbitt	Tartaric Acid—		France, 10 pags.	H. & F. Wf.
Germany, 170 pags.	T. H. Lee	" 25	Flack, Chandler & Co.	France, 10 pags.	Becker & Ull	Holland, 7 pags.	Kirkpatrick & Co.
" 14	C. Atkins & Nisbet	Germany, 10	Oastler, Palmer & Co.	" 25	F. C. Devos & Co.	" 4	"
Belgium, 29	T. Palmer	Turmeric		" 8	"	Ultramarine—	
Germany, 117	Zimmermann	E. Indies, 150 pags.	Hoare, Wilson & Co.	" 44 bbls.	W. Harrison & Co.	Holland, 3 pags.	W. Harrison & Co.
E. Indies, 8	P. & O. Co.	" 50	Prop. Bull Wf.	Paraffin Wax—		Belgium, 3 cks.	A. B. Curtis & Co.
Germany, 8	Craven & Co.	" 235	Lucas & Spencer's Wf., Ld.	U. States, 110 bbls.	G. H. Frank	Yarnish—	
Chloride of Iron—		" 138	Clyde S. Co.	Rangoon, 822 cks.	H. Hill & Son	France, 12 pags.	Flageuillet & Co.
Holland, 1 pkge.	Hernu, Peron & Co.	" 600	L. & I. D. Jt. Co.	U. States, 2,342	Anglo-Am. Oil Co.	Germany, 1	H. Lamb
Cream of Tartar—		" 106	Arbuthnot, Ewart & H. Green	Phosphate Rock—		U. States, 50	Allan Brs. & Co.
Italy, 3 pags.	Thames S. T. & L. Co. Ld.	" 134	M. D. Co.	Belgium, 12 t.	H. & E. Albert	Verdigris—	
France, 2	Ross & Deering	Valonia		France, 200	A. J. Smith	France, 3 pags.	H. & F. Wf.
Spain, 7	W. C. Bacon & Co.	A. Turkey, 50	M. D. Co.	" 405	A. Hunter & Co.	Vermillion—	
Greece, 18	Bueura & Co.	Farina—		Pitch—		Hong Kong, 10 cks.	W. M. Smith & Co.
Holland, 30	Kirkpatrick & Co.	Germany, 200 pags.	Seaward & Co.	Germany, 200 bbls.	A. Dexter & Co.	Germany, 1	Phillips & Graves
" 9	B. & F. Wf. Co.	Holland, 25 pags.	R. G. Hall & Co.	France, 8 pags.	Pickford & Co.	White Lead—	
France, 30	Finlay & Co.	" 19	T. H. Lee	Germany, 4 cks.	H. Lambert	France, 19 cks.	J. Watts & Co.
" 10	W. C. Bacon & Co.	Germany, 540	Ohlenschlager Brs.	Spain, 14	Poth, Hille & Co.	Belgium, 1	10 bbls. J. L. L.
" 5	M. Ashby, Ld.	" 50	R. G. Hall & Co.	Plumbago—		" 4 pags.	Sower, S. & Co.
" 12	F. C. Devos & Co.	Glucose—		Ceylon, 210 bbls.	Nat. S. S. Co.	Germany, 24 cks.	Peter J.
" 1	J. L. Lyon & Co.	U. States, 170 pags.	800 c.	Germany, 22 cks.	B. Dubowski & Son	" 6	A. Steinhilber & Co.
" 15	C. F. Gerhardt	" 1,500	1,500 c.	Rangoon, 82	J. Thredder, Son, & Co.	" 72	M. Ashby, Ld.
" 3	T. Trapp & Sons	" 150	900	Potashes—		" 38	D. Storer & Co.
" 2	B. & F. Wf. Co.	" 1,000	1,000	U. States, 330 c.	Charles & Fox	Holland, 20	Burrell & Co.
Dextrine—		" 525	2,996	Potassium Bicarbonate—		Wood Pulp—	
Germany, 50 pags.	R. G. Hall & Co.	" 50	300	Holland, 30 c.	A. & M. Zimmermann	Sweden, 700 pags.	W. G. Taylor & Co.
" 50	Vokios & Co.	" 120	683	Potassium Bioxalate—		" 1,000	Henderson, Co. & Co.
" 120	Seaward Brs.	France, 150	150	Holland, 25 pags.	Beresford & Co.	Holland, 1,200	Little & John
Dyestuffs—		Lead Acetate—		Potassium Bromide—		" 1,650	E. J. & W. Gollins
Argols	Thames S. T. & L. Co. Ld.	Germany, 32 pags.	F. Boehm	U. States, 20 pags.	S. Lambert & Co.	Norway, 1,500	W. E. Burt & Co.
Italy, 74 pags.	L. & I. D. Jt. Co.	Magnesium Sulphate—		Potassium Carbonate—		Austria, 102	W. Friedl.
Cape, 14	B. & F. Wf. Co.	Germany, 113 pags.	Berger, Kahler & Co.	France, 80 c.	J. A. Reid	Sweden, 220	C. S. Lee
France, 2	"	" 100	H. S. Smith & Co.	" 80	Petri Brs.	Germany, 121	H. C. Ewe
Gutch		" 25	204	Holland, 100	Eeresford & Co.	Holland, 11	C. Knudsen
Rangoon, 500 pags.	W. A. Smith & Co.	Manganese—		Germany, 100	Petri Brs.	Norway, 150	E. J. & W. Gollins
Italy, 500	Beresford & Co.	Holland, 1 t.	J. Barber & Co.	Potassium Chlorate—		Germany, 40	C. S. Lee
Rangoon, 400	Arracan Co., Ld.	Extracts		Norway, 5 pags.	M. D. Co.	U. States, 100 bbls.	M. Ashby, Ld.
E. Indies, 100	A. B. Curtis & Co.	U. States, 177 pags.	W. I. Chem. Wks.	Potassium Chloride—		Holland, 500 cks.	Soudy & Sons
" 12	Hoare, Wilson & Co.	Denmark, 69	A. F. White & Co.	France, 34 pags.	Carey & Sons	Germany, 4	H. Lamb
France, 10	Carron & Co.	Extractions		Germany, 200	W. G. Blagden	Holland, 123 bbls.	M. Ashby, Ld.
Rangoon, 750	Leach & Co.	Extractions		Potassium Chloride—		Germany, 50	"
" 1,220	Phillips & Graves	Extractions		Potassium Chloride—		Zinc Sulphate—	
Extractions		Extractions		Potassium Chloride—		Germany, 11 pags.	City Chem. & F. J.
U. States, 177 pags.	W. I. Chem. Wks.	Extractions		Potassium Chloride—		" 31	"
Denmark, 69	A. F. White & Co.	Extractions		Potassium Chloride—		Zinc Sulphate—	

VERPOOL.

Week ending April 25th.

Acid—	17 blns.	
Alumina—	10 dms.	Larranaga & Co.
Alum—	25 cks.	
Alum—	33	
Alum—	4,600 bgs.	
Oil—	54 brls. 149 cks. 6 cs.	
Als (otherwise undescribed)	50 cks.	
Alum—	5	3 cs.
Alum—	3 cks.	
Alum—	4 cks.	
Alum—	14	
Alum—	7 cs.	M. Bell
Alum—	642 brls.	
Alum—	4,403	2,234 bgs.
Alum—	1 ck.	
Alum—	5	Sachse & Klemm
Alum—	2 bgs.	Kolp & Co.
Alum—	120 brls. 112 bks.	
Alum—	5	W. Bingham
Alum—	10	98 cks.
Alum—	982 ps.	Ledward, Bibby & Co.
Alum—	4,108	Oetling & Co.
Alum—	9,963 stcks.	Gruning & Co.
Alum—	7,153	W. Duranty & Son
Alum—	303	T. Ruete & Co.
Alum—	2,326	R. & J. Henderson
Alum—	756 bgs.	
Alum—	865	5,086 bls.
Alum—	13 chts.	
Alum—	403 t.	E. Brownbill & Co.
Alum—	282	
Alum—	8 cks.	
Alum—	139 bgs.	A. Ewart & Co.
Alum—	217	
Alum—	120 t.	Robinson & Hadwen
Alum—	130	
Alum—	115	
Alum—	2 cks.	
Alum—	350 brls.	
Alum—	20	
Alum—	27 cks.	Johansen & Dahl
Alum—	8 cs.	
Alum—	14 bskts.	
Alum—	1 cs.	
Alum—	480 bgs.	A. Gibbs, Son & Co.
Alum—	75 cks.	
Alum—	1 kg.	W. I. & P. S. S. Co
Alum—	20 cs.	A. Shilton & Co
Alum—	1,002 brls.	Thompson & Bedford
Alum—	300 brls.	

New York, 360	Standard Oil Co.
Philadelphia, 1,780	Geo. B. Taylor
Phosphate—	
Antwerp, 280 t.	
Potash—	
Portland, 3 brls.	H. Moore & Co.
Rotterdam, 1 ck.	
Quicksilver—	
Gijon, 85 flks.	A. Bailey
Rosin—	
Pensacola, 90 brls.	
New York, 300	
Rotterdam, 2 cks.	
Saltpetre—	
Calcutta, 732 bgs.	Ralli Brs.
Soap—	
Marseilles, 22 cs.	
Demerara, 353 bks.	Gossage & Sons
New York, 2	Burroughs, Wellcome & Co.
N. Orleans, 3,706 brls.	
Soapstone—	
Bordeaux, 200 bgs.	G. G. Blackwell, Sons & Co.
Sodium Nitrate—	
Pisagua, 17,309 bgs.	Cox Brs.
Caleta Buena, 14,610	F. Huth & Co.
Starch—	
Antwerp, 490 cs.	J. T. Fletcher & Co.
Rotterdam, 295	
Stearine—	
Antwerp, 35 bgs.	
Rotterdam, 13 bls.	
New York, 50 hds.	
Tallow—	
New York, 135 tcs.	
Bordeaux, 31 cks.	
Sydney, 837	Lever Brs., Ltd.
" 158	
Tartar—	
Bordeaux, 18 cks.	
Tartaric Acid—	
Rotterdam, 4 cks.	
Tinical—	
Calcutta, 441 bgs.	
Treacle and Molasses—	
New York, 50 brls.	J. Azarian
" 1 kg.	
Bordeaux, 1 cs.	
Yarnish—	
Lisbon, 2 cs.	Bradshaw, Brs. & Co.
Verdigris—	
Bordeaux, 3 cks.	
Waste Salt—	
Hamburg, 1,000 bgs.	
Wood Pulp—	
Oporto, 600 bls.	Crama Wood
Antwerp, 54 bls.	
Rotterdam, 102	
Gothenburg, 136	
Zinc Ashes—	
Marseilles, 11 cks.	
Zinc Oxide—	
Rotterdam, 100 cks.	
Zinc Skimmings—	
New York, 7 brls.	10 cks
Zinc White—	
Rotterdam, 158 cks.	

MANCHESTER.

Week ending April 27th.

Acetic Acid—	
Rotterdam, 9 blns.	
Aluminous Cake—	
Rotterdam, 50 bgs.	
Antimony—	
Treport, 2 cks.	
Barytes—	
Rotterdam, 100 bgs.	
Colours—	
Antwerp, 16 cks. 17 cs.	
Rotterdam, 45 37	44 brls.
8	2
Dyestuffs—	
Extracts	
Fiume, 60 brls.	
Treport, 20 cks. 10 cs.	
Indigo	
Rotterdam, 6 cs.	
Sumac	
Palermo, 100 bgs.	

Valonia	
Marathonisi, 359 L.	
Farina—	
Rotterdam, 170 bgs.	
French Chalk—	
Treport, 10 cs.	
Glue—	
Rotterdam, 120 bgs. 5 cs.	
Treport, 113 bls. 32 cks.	
Hamburg, 11	
Lead Acetate—	
Hamburg, 12 cks.	
Limestone—	
Antwerp, 3 cts.	
Mineral White—	
Fiume, 75 bgs.	
Naphthaline—	
Rotterdam, 3 cks.	
Ochre—	
Treport, 80 cks. 2 cs.	
Potash—	
Rotterdam, 15 cks.	
Pumice Stone—	
Treport, 3 cs.	
Sodium—	
Hamburg, 25 cks.	
Sodium Acetate—	
Treport, 25 cks.	
Sodium Oxide—	
Hamburg, 2 cs.	
Starch—	
Fiume, 400 bgs.	
Rotterdam, 40 cs.	
Antwerp, 508	
Tin Perchloride—	
Antwerp, 3 cks.	
Waste Salt—	
Hamburg, 102 bgs.	qty.
White Lead—	
Rotterdam, 8 cks.	
Wood Spirit—	
Hamburg, 8 dms.	
Wood Pulp—	
Christiania, 3,408 bls.	
Zinc Oxide—	
Antwerp, 110 brls.	
Zinc White—	
Rotterdam, 5 cks.	

HULL.

Week ending April 27th.

Acetic Acid—	
Rotterdam, 17 blns.	Hutchinson & Son
Acid—	
Leghorn, 3 cks.	Wilson, Sons, & Co., Ltd.
" 3 brls.	
Aniline Colour—	
Hamburg, 4 cks.	Sissons Brs. & Co.
Aniline Salt—	
Hamburg, 10 cks.	Bailey & Leatham
Arsenic—	
Hamburg, 10 kgs.	Wilson, Sons, & Co., Ltd.
Barytes—	
Antwerp, 144 cks.	H. F. Pudsey
Rotterdam, 12	W. & C. L. Ringrose
Bremen, 9	50 bgs. G. Holmes & Co.
Castor Oil—	
Leghorn, 35 cs.	Wilson, Sons, & Co., Ltd.
Genoa, 85	
Chemicals (otherwise undescribed)	
New York, 1,395 bgs.	Wilson, Sons, & Co., Ltd.
Stettin, 26 cks.	"
Naples, 2	"
Antwerp, 35 dms. 28 pkgs.	"
Dunkirk, 41	29 pkgs. "
2 cks.	
Cod Oil—	
Bergen, 98 pks. 10 brls.	Wilson, Sons, & Co., Ltd.
Colours—	
Antwerp, 6 pkgs.	Wilson, Sons, & Co., Ltd.
Rotterdam, 122 pks. 1 ck.	W. & C. L. Ringrose
Dunkirk, 1 cs.	Wilson, Sons, & Co., Ltd.
Rotterdam, 35 pkgs. 1 brl. 12 cks.	Hutchinson & Son

Cottonseed Oil—	
New York, 500 brls.	Wilson, Sons, & Co., Ltd.
Dyestuffs—	
Alizarine	
Rotterdam, 79 cks.	W. & C. L. Ringrose
" 21 brls.	Hutchinson & Son
Logwood	
Hamburg, 823 pces.	Wilson, Sons, & Co., Ltd.
Madder	
Rotterdam, 2 cks.	Hutchinson & Son
Valonia	
Smyrna, 50 L.	
Farina—	
Harlingen, 450 bgs.	W. & C. L. Ringrose
Ghent, 220 cs.	Wilson, Sons, & Co., Ltd.
Hamburg, 420 bgs.	W. & C. L. Ringrose
" 250	Wilson, Sons, & Co., Ltd.
Antwerp, 100	
Glucose—	
Stettin, 200 bgs.	
Glue—	
Hamburg, 4 cks.	Wilson, Sons, & Co., Ltd.
Dunkirk, 10	"
Limestone—	
Antwerp, 2 cts.	Wilson, Sons, & Co., Ltd.
Manganese—	
Bremen, 2 cks.	
Manganese Oxide—	
Rotterdam, 2 brls.	Hutchinson & Son
Manure—	
Ghent, 1,020 bgs. 81 t.	Wilson, Sons, & Co., Ltd.
Naphthol—	
Hamburg, 5 cks.	Wilson, Sons, & Co., Ltd.
Naphthylamine—	
Hamburg, 2 cks.	Wilson, Sons, & Co., Ltd.
Nitrite—	
Rotterdam, 10 cks.	Hutchinson & Son
Ochre—	
Marseilles, 140 cks.	Wilson, Sons, & Co., Ltd.
Paint—	
New York, 35 cs.	Wilson, Sons, & Co., Ltd.
Boston, 39	"
Copenhagen, 1 dm	"
Phosphate—	
Antwerp, 500 bgs.	Bailey & Leatham
Dunkirk, 100	
Pitch—	
Hamburg, 13 cs.	Wilson, Sons, & Co., Ltd.
Potash—	
Rotterdam, 19 dms.	W. & C. L. Ringrose
Pumice Stone—	
Leghorn, 85 pks.	Wilson, Sons, & Co., Ltd.
Rosin—	
Wilmington, 3,636 brls.	
Saltpetre—	
Rotterdam, 30 cks.	Veltmann & Co.
Soap—	
Rotterdam, 4 cs.	W. & C. L. Ringrose
Naples, 19	Wilson, Sons, & Co., Ltd.
Marseilles, 6	"
Soda—	
Rotterdam, 50 cks.	Hutchinson & Son
Starch—	
Antwerp, 150 cs.	Bailey & Leatham
Rotterdam, 54	W. & C. L. Ringrose
Bremen, 1,320	Veltmann & Co.
Rotterdam, 40	Hutchinson & Son
Tar—	
Hango, 148 cks.	J. Good & Sons
Tartar—	
Bordeaux, 6 cks.	Rawson & Robinson

Products (otherwise undes.)—		
arg., 100 pkgs.	£45	
Carbonate—		
Antinople, 4 c.	£20	
Sulphate—		
Arne, 6 t. 4 c.	£90	
Arne, 30	480	
Arne, 15	240	
Arne, 10	160	
Arne, 10	157	
Arne, 10	160	
Arne, 25	370	
of Tartar—		
Arne, 10 c.	£33	
Arne, 8	25	
Arne, 5	16	
Arne, 1 t.	65	
Arne, 5	16	
Arne, 6	20 kgs. 72	
Arne, 5	19	
Arne, 5	338	
Arne, 1	34	
Antacids—		
Arne, 41 pkgs.	£33	
Arne, 18 cs.	50	
Arne, 5	7 c.	39
Arne, 50	14 cks.	173
Arne, 47 pkgs.	102	
Antisepic of Lime—		
Arne, 5 c.	£90	
Arne, 15 cs.	£30	
Arne, 2 c.	23	
Arne, 170 t.	£1,785	
Arne, 152	14 c.	746
Arne, 20	200	
Arne, 86	3	810
Arne, 24	5	100
Arne, 15	100	
Arne, 133	315	
Arne, 4	9	25
Arne, 20	427	
Arne, 6 cs.	£16	
Arne, 40 carboys	80	
Arne, 9 c.	£102	
Arne, 4	51	
Arne, 46 cs.	494	
Arne, 5	50	
Arne, 1 t. 3 c.	£20	
Arne, 4 t. 5 c.	£545	
Arne, 10 cs.	£55	
Arne, 13 pkgs.	48	
Arne, 2 t. 14 c.	£378	
Arne, 2 cks.	£38	
Arne, 10 c.	41	
Arne, 5	92	
Arne, 5 t.	375	
Arne, 10	175	
Arne, 2 t. 10 c.	£60	
Arne, 13	7	335
Arne, 1	1	24
Arne, 25	543	
Arne, 5	3	128
Arne, 33 drs.	£20	
Arne, 1 t. 6 c.	115	
Arne, 799	190	
Arne, 5	11	210
Arne, 4 c.	£13	
Arne, 17 c.	£6	
Arne, 2 t. 5	112	
Arne, 5 t. 10 c.	13	
Arne, 15 c.	£6	
Arne, 2 t. 1	45	
Arne, 13	8	
Arne, 1	6	
Arne, 1	10	9
Arne, 2	10	16
Arne, 15	6	
Arne, 1 t. 10 c.	£40	

Sodium Carbonate—		
Christchurch, 5 c.	£8	
E. London, 10	16	
Sodium Hypophosphite—		
Rotterdam, 3 c.	£54	
Sodium Silicate—		
Auckland, 10 t. 8 c.	£46	
Lyttelton, 11	52	
Strontium Nitrate—		
New York, 2 t. 10 c.	£60	
Sulphur—		
Dunedin, 1 t. 5 c.	£9	
Trinidad, 2	5	20
Fremantle, 3		
Lisbon, 500 brls.	348	
Algoa Bay, 2	5	22
Sulphur Dioxide—		
New York, 41 pkgs.	£74	
Sulphuric Acid—		
Foochow, 4 cs. 10		
Singapore, 1 t. 18 c.	18	
Natal, 20	11	
Algoa Bay, 4	31	
Penang, 5	5	23
Superphosphate—		
Barbadoes, 100 t.	£300	
Trinidad, 120	1 c.	800
Martinique, 257		771
Guadeloupe, 19	14	74
Tartaric Acid—		
Dunedin, 4 c.	£19	
Newcastle, 1 t.	93	
E. London, 4 cks.	16	
Montreal, 15	75	
Sydney, 20 kgs.	93	
Melbourne, 10	45	
Algoa Bay, 5	20	
Adelaide, 1	15	167
Bombay, 4	18	
Brisbane, 1	5	115

LIVERPOOL.

Week ending May 1st.

Albumen—		
New York, 4 t. 15 c.	£305	
Alkali—		
Bombay, 1 t. 16 c.	£10	
Alum—		
Hamburg, 3 t.	£14	
Galatz, 7	3 c.	30
Valparaiso, 1	6	3 q.
Boston, 30	5	163
Montreal, 21	8	101
Mersyne, 2	13	19
Alexandria, 7	12	34
Halifax, 5	19	30
St. John's, N.B., 1		5
Alumina Sulphate—		
Montreal, 26 t. 16 c.	£130	
Aluminoferrie—		
Montreal, 25 t. 14 c.	2 q.	£94
Aluminous Cake—		
Melbourne, 5 t. 1 c.	2 q.	£14
Ammonium Carbonate—		
Halifax, 5 c.	£8	
Paris, 1 t. 10	3	50
Valparaiso, 1		34
Genoa, 25 kgs.	1	3
Yokohama, 1	10	52
Bahia, 2		5
Halifax, 10		17
Venice, 10		7
Ammonium Chloride—		
Barcelona, 1		£28
Naples, 8 c.	3 q.	12
Montreal, 5	16	2
Alexandria, 1		37
B. Ayres, 8		14
Beyrout, 1		43
Ammonium Sulphate—		
Bruges, 51 t.	1 q.	£520
Las Palmas, 82	3 c.	2
Barcelona, 50	16	508
Messina, 4	16	3
Barbadoes, 4	4	2
Valencia, 75	15	2
Antimony—		
Bilbao, 1 ck.		
Asbestos—		
Philadelphia, 16 brs. 1 cs.		
Barium Chlorate—		
Oporto, 5 c.	£20	
Basic Slag—		
Kingston, Jam., 400 bgs.		
La Guayra, 100		
Bleaching Powder—		
Baltimore, 97 cks.		

Boston, 538		
Dunkirk, 18		
Halifax, 9 cs.		
Leghorn, 25		
Montreal, 80		
Norrköping, 67		
Rio de Janeiro, 13 brls.		
Rouen, 14		
Ancona, 27		
Copenhagen, 27		
Genoa, 136		
Malaga, 12		
Messina, 13		
Naples, 50		
New York, 221		
Oporto, 16 kgs.		
San Sebastian, 29		
Vera Cruz, 13		
Vigo, 10		
Rosario, 1 t.	£17	
Borate of Lime—		
Rotterdam, 29 t. 7 c.	1 q.	£332
Borax—		
Amsterdam, 1 t. 1 c.	£21	
E. London, 2	10	56
Stettin, 7	7	3 q.
Portland, 3	6	66
Genoa, 19	2	20
Hamburg, 39	3	788
Alexandria, 2		31
Algoa Bay, 5	8	121
Camphor—		
Guayaquil, 5 cs.		
Iquitos, 1		
Carbolic Acid—		
Rouen, 2 t. 2 c.	£109	
Kobe, 8	10	417
Valparaiso, 3 cs.	8	
Alexandria, 2	14	1 q.
B. Ayres, 9		12
M. Video, 13	2	33
Hong Kong, 1		13
Castor Oil—		
Hamburg, 5 cs.		
Addah, 20		
Caustic Soda—		
Baltimore, 50 dms.		
Boston, 55	180 brls.	
Cartagena, N.G., 10		
Fiume, 120		
Genoa, 199		
Gothenburg, 5		
Hamburg, 350		
La Guayra, 15		
Leghorn, 15		
Lisbon, 50		
Mauritius, 10		
Messina, 173		
M. Video, 173	25	
Montreal, 200		
N. Orleans, 55		
New York, 374		
Philadelphia, 200		
Rangoon, 35		
Rotterdam, 52		
Rouen, 51		
St. John's, N'dd., 6 pkgs.		
Savannah, 31		
Sourabaya, 220		
Tampico, 400		
Toronto, 100		
Trieste, 30		
Vera Cruz, 118		
Alexandria, 11		
Bahia, 65		
Barcelona, 20		
B. Ayres, 20		
Calcutta, 20		
Fairwater, 35		
Halifax, 35		
Hong Kong, 25		
Naples, 105		
Penang, 90		
Pt. Elizabeth, 110		
Quebec, 14		
Reval, 59		
Rio de Janeiro, 59		
Singapore, 50		
Talcahuano, 50		
Tarragona, 5		
Valencia, 20		
Venice, 15		
Vigo, 10		
Chemicals (otherwise undescribed)		
Barcelona, 1 c.	2 q.	£20
Hamburg, 5		9
Alexandria, 10		18
Gothenburg, 5		9
Stettin, 5		9
China Clay—		
Bombay, 217 t. 10 c.		
Boston, 788		
Montreal, 250		
New York, 100 cks.		
Rio de Janeiro, 48		

Chloroform—		
B. Ayres, 1 q.	£9	
Coal Products—		
Aniline Colours		
New York, 24 cks.		
Shanghai, 16 cs.		
Yokohama, 10		
Aniline Oil		
Montreal, 1 dm.		
Boston, 5		
Aniline Salts		
Montreal, 1 cs.		
Rio de Janeiro, 4		
Smyrna, 16 brls.		
Boston, 24		
Trinidad, 10 cks.		
Anthracene		
Rotterdam, 125 brls.		
Naphthaline Colours		
New York, 2 cks.		
Pitch		
Carril, 30 cks.		
Galatz, 100 brls.		
Genoa, 1,230 t.		
Ibrail, 30		
Tar		
Galatz, 100 brls.		
Ibrail, 40		
Pacasmayo, 20 dms.		
Antwerp, 104 t.		
Bilbao, 1 ck.		
Lagos, 12 brls.		
New York, 17 cks.		
Sierra Leone, 5		
Copperas—		
San Francisco, 29 t. 3 c.	£43	
Calcutta, 21	2	40
Natal, 3	12	3 q.
Copper Sulphate—		
Antwerp, 1 t. 5 c.	£20	
Lisbon, 75	9	1,147
Rouen, 15		240
Smyrna, 1	9	2 q.
Mauritius, 1		19
Oporto, 23	10	2
Libau, 1	2	351
Alexandria, 1	2	77
Vera Cruz, 19	18	1
San Francisco, 14	1	199
Sydney, 7	12	1
Bordeaux, 7	12	1,140
Odessa, 7	12	258
Venice, 7	12	1,143
Naples, 74	12	1,337
Tarragona, 15	4	2
Ibrail, 1	10	22
Paris, 10		147
Marseilles, 72	12	3
Algiers, 10	4	163
Genoa, 145	19	1
Leghorn, 39	4	1
Barcelona, 35	2	542
Fiume, 1	5	3
Trieste, 25	15	303
Bilbao, 5	19	1
Vigo, 10		160
Melbourne, 2		32
Disinfectants—		
B. Ayres, 1 t. 6 c.	£120	
Bombay, 1	5	8
M. Video, 4		11
Gelatine—		
Baltimore, 75 bns.		
Boston, 100		
New York, 100		
Philadelphia, 100		
Glue—		
Alexandria, 6 cks.		
Hong Kong, 20 tins		
Mauritius, 2		
Rangoon, 14 cs.		
Gypsum—		
Rio de Janeiro, 2 t.	1 q.	£19
Lamp Black—		
Guantanamo, 8 brls.		
Litharge—		
Bahia, 25 kgs.		
Magnesia—		
B. Ayres, 6 c.	£7	
Havre, 1 t. 14		53
Magnesium Sulphate—		
Maceio, 10 brls.		
Rio de Janeiro, 35 kgs.		
Manganese—		
New York, 2 t. 14 c.	1 brl.	
Philadelphia, 21	10	
Manganese Ore—		
B. Ayres, 10 c.		
Manure—		
Valencia, 50 t. 10 c.	2 q.	£150
Landerneau, 230	10	2
Antwerp, 5	7	3

Nitrous Oxide—

Havana, 1 cks.

Ochre—

Lisbon, 6 brls.

Oxalic Acid—

Bombay, 1 t. £36

Bilbao, 7 c. 12

Paint—

Alexandria, 40 kgs. 22 dms.

B. Ayres, 3 cks. 10 16 2

Hamburg, 10 16 2

Ibrail, 2 16 2

Madeira, 4 cks. 2 26 32

New York, 2 26 32

Para, 142 45 3 brls.

Valparaiso, 142 45 3 brls.

Yokohama, 142 45 3 brls.

Alexandria, 142 45 3 brls.

Amsterdam, 142 45 3 brls.

Antwerp, 142 45 3 brls.

Bathurst, 142 45 3 brls.

Buenos, 142 45 3 brls.

Carril, 142 45 3 brls.

Cienfuegos, 142 45 3 brls.

Goree, 142 45 3 brls.

Guantanamo, 142 45 3 brls.

Hobart Town, 142 45 3 brls.

Maranham, 142 45 3 brls.

Marsailles, 142 45 3 brls.

Mucilla, 142 45 3 brls.

Old Calabar, 142 45 3 brls.

Opobo, 142 45 3 brls.

Parnahyba, 142 45 3 brls.

St. John's, N'd., 142 45 3 brls.

San Juan, 142 45 3 brls.

Savannah, 142 45 3 brls.

Sierra Leone, 142 45 3 brls.

Sydney, 142 45 3 brls.

Warri, 142 45 3 brls.

Painters' Colours—

Alexandria, 173 kgs. 20 dms.

Aquadilla, 2 3 tcs. 1

Bombay, 845 17 cks. 43 brls.

B. Ayres, 50 cks. 43 brls.

Cape Town, 17 cks. 17 cks.

Constantinople, 1,170 1

Guantanamo, 1 5

Iquitos, 5 20 dms.

Kurrachee, 2 20 dms.

Kustendjie, 2 20 dms.

Lagos, 2 20 dms.

La Guayra, 100 5 brls.

Matanzas, 100 5 brls.

Melbourne, 55 23 1

M. Video, 15 15

Montreal, 30 99 22

Para, 19 tcs. 108 22

San Juan, 4 6 9

Santos, 3 3

Victoria, Africa, 22 2

Vostige, 2 2

Bahia, 15 1

Bilbao, 15 1

Boston, 5 5

Manaoa, 5 5

Paraffin Wax—

Syr, 10 bgs.

Phosphate—

Barcelona, 61. 2 c. 1 q. £24

Phosphorus—

M. Video, 2 c. £22

Sydney, 1 t. 200

Higo, 1 250

N. Orleans, 85 150

Tampico, 10 100

Plumbago—

Alexandria, 1 cks.

Potassium Bichromate—

Norfolk, 5 t. £200

Constantinople, 5 2 c. 2 q. 215

Potassium Chlorate—

Tampico, 2 t. £70

Genoa, 3 15 c. 161

Havana, 1 10 60

M. Video, 17 34

Yokohama, 17 34

Calcutta, 17 34

Rotterdam, 17 34

Naples, 17 34

Venice, 17 34

New York, 23 25 226

Higo, 20 25 226

Gutejefsky, 22 10 1,120

Potassium Nitrate—

Macao, 5 c. 2 q. £9

Potassium Prussiate—

Montreal, 3 t. £232

Rosin—

Bruges, 5 brls.

Salt—

Amsterdam, 181 t

Antwerp, 415

Belize, 87

Bonny, 110

Boston, 800

Buguma, 50

Copenhagen, 788

Isles de Los, 50

Landana, 28

Loango, 13 3 c.

Montreal, 338 5

Newcastle, 242 6

Quebec, 400

Rotterdam, 240

San Francisco, 161

Smyrna, 6

Sydney, 325

Trinidad, 46 16 300 cks.

Abonnema, 24

Accra, 25

Akassa, 595

Algoa Bay, 8 18

Bakana, 35

Barbadoes, 25

B. Ayres, 476

Cape Town, 22

Charlotte Town, 299

E. London, 8 13

Halifax, 17

Lagos, 50

Loango, 16

N. Orleans, 65

Opobo, 195

Picton, 438

Pt. Natal, 100

Rangoon, 1,462

Salt Pond, 10

Sierra Leone, 200

Salt Cake—

Philadelphia, 45 t. 5 c. £68

Saltpetre—

Pireus, 7 t. 10 c. £164

B. Ayres, 1 24

Las Palmas, 5 101

Coquimbo, 4 2 q. 6

Maranham, 19 2 24

Para, 10 12

Alexandria, 1 23

Parnahyba, 1 4 3 6

Halifax, 1 23

Soap—

Alexandria, 10 kgs. 4 brls.

Algoa Bay, 2,200 bxs.

Barbadoes, 1,044

Bathurst, 404

Bombay, 1,360 43 cks.

Bonny, 300

Boston, 4 cks.

Cabenda, 15

C. C. Castle, 20

Cape Town, 550

Chama, 80

Constantinople, 300

Dominica, 24

Durban, 1,000

E. London, £81

Elmina, 50

G. raltar, 170 1

Gd Bassam, 20

Kingston, Ja, 1,350 5

Kurrachee, 1,000 15

Lagos, 40 10

Las Palmas, 290

Macassar, 500

Malta, 72 20

Manaoa, 150 1

Maranham, 50

Menada, 1,000

Morant Bay, 25

Mossel Bay, 100

New York, 3,075 1,140

Old Calabar, 1,000

Opobo, 2,900

Para, 200

Pt. Natal, 720

Pt. Said, 20

S. John's, N'd., 195 50

Savannah, 4

Sapeli, 200

Sierra Leone, 200

Sourabaya, 2,000

Teneriffe, 672

Toronto, 2

Underhill, 14

Warri, 600

Bilbao, 2 brls.

Boca del Toro, 25

Calcutta, 3

Constantinople, 100

Gr. nada, 30

Havre, 565

Hong Kong, 10

Lanzarote, 20

Monrovia, 80

Montreal, 2

Philadelphia, 550

Rotterdam, 630

Samarang, 2

Shanghai, 1,812 6

Singapore, 25

Trinidad, 550

Valparaiso, 3

Vera Cruz, 3

Soda Alkali—

Catania, 32 brls.

Genoa, 70

Leghorn, 75

Newcastle, 16 dms.

Odessa, 200

Phumari, 35

Smyrna, 111

Soda Ash—

Antwerp, 150 bgs. 20 cks.

Bombay, 3 kgs. 80 110 kgs.

Ceara, 15 brls.

Genoa, 15

Gothenburg, 50 11

Leghorn, 150 20

Montreal, 560 16 56

Naples, 20 10

New York, 4,030 44 403 kgs.

Sydney, 98 160 brls.

Syr, 50

Baltimore, 7,675 111 294 tcs.

Barcelona, 10

Bari, 100

Boston, 2,700 385 199

B. Ayres, 16 100 brls.

Calcutta, 137

Halifax, 20

Higo, 75

Kobe, 230

Melbourne, 128

N. Orleans, 25 tcs.

Oporto, 15

Philadelphia, 3,414 141 595

Rio Janeiro, 100 brls. 250

San Francisco, 238

Yokohama, 400

Soda Crystals—

Boston, 280 brls.

London, Ont., 200 kgs.

Malta, 50

Montreal, 300 600 5 ca.

Toronto, 330 25

Bombay, 250

Calcutta, 32

Gibraltar, 35

Halifax, 225

Iquique, 75

New York, 56 140 cks.

Philadelphia, 110

Pt. Natal, 30

St. John's, N'd., 25

Samarang, 30

Sodium Arseniate—

Boston, 15 cks.

Lisbon, 2

Sodium Bicarbonate—

E. London, 40 kgs.

Melbourne, 900

Odessa, 310

Stettin, 2 cks.

Toronto, 50

Algoa Bay, 40 100 bgs.

Lagos, 20

Antwerp, 25 22

Bahia, 40

Barbadoes, 187

Beyrout, 50

Bombay, 50

Bordeaux, 40

Brisbane, 75

B. Ayres, 20 200

Calcutta, 825

Charlotte Town, 170

Durban, 20

Genoa, 25 66

Halifax, 200

Havre, 190

La Libertad, 40

Messina, 40

Montreal, 1 cs. 830 50 105

Naples, 200

N. Orleans, 225

Palermo, 45

Philadelphia, 200

Rotterdam, 40

St. John's, N'd., 29

Smyrna, 40

Sydney, 81

Teneriffe, 10

Townsville, 15

Trieste, 105 19

Vigo, 8 brls.

Sodium Carbonate—

Rio de Janeiro, 4 kgs.

Sodium Sulphate—

Alcals (otherwise undescribed)

Perp,	20 cs.	14 cks.	5 pkgs.
ten,	1	3	
nen,	12		
stania,	4		
nhagen,	10		
enburg,	64	2	
burg,	30	6	17 pks.
u,	20		
erdam,	84		

Linseed Oil—

Perp,	400 c.		
nen,	200		
theim,	41		
burg,	1,430		
erdam,	2,030		
anger,	82		
lin,	702		
holm,	1,406		

Stuffs (otherwise undescribed)

on,	3 kgs	44 cks	
burg,	7 cs.		
York,	24	30 dms.	
erdam,	1		
il,	1		
in,	160 bgs.		

Red Oil—

en,	8 c.		
en,	191		
stiansand,	59	8 brls.	
stiansund,	691		
theim,	208		
burg,	484		
York,	177		
rdam,	89		

re—

gsberg,	49 t.		
ingen,	200 bgs.		

al White—

burg,	1 ck.		
rdam,	7		

ers' Colours—

erp,	9 cks.	14 dms.	2 cs.
n,	56		100 pkgs.
en,	17		
n,	274	146 pks.	
stiansand,	7	52 kgs.	
stania,	2	96 pkgs.	
nhagen,	1		
irk,	3	4 cs.	
mburg,	12		

to,

burg,	19		
York,	330	70 pks.	
rdam,	22		
er,	20		

nger,

n,	29	14 dms.	200 pkgs.
holm,	7		

White—

Francisco,	193 cks.		
------------	----------	--	--

erp,

g,	150 t.		
rdam,	156		
	85		

m,

holm,	454 bgs.		
	99 t.		

en,

n—	2 cs.		
stania,	5 bgs.		

tiania,

nhagen,	10 cks.		
irk,	10		
burg,	25		
rdam,	20		
n,	4		

sh—

mburg,	1 cs.		
burg,	5 cks.		
holm,	3	4	1 dm.

GLASGOW.

Week ending May 2nd.

Acid—

n,	2 t.	4½ c.	
en—			
h,		7½ c.	

onium Sulphate—

cia,	376 t.	6½ c.	
delpia	15		

Asbestos—

Calcutta,	10½ c.		
-----------	--------	--	--

Boiler Composition—

Sydney,	8 c.		
---------	------	--	--

Borax—

E. London,	2 t.		
Melbourne,	2	1 c.	

Carbolic Acid—

Calcutta,	100 glns.		
-----------	-----------	--	--

Caustic Soda—

Canada,	30 t.	5 c.	
Calcutta,		5½	

Chemicals (otherwise undescribed)

Rangoon,			£26
----------	--	--	-----

China Clay—

Canada,	21 t.	11 c.	
---------	-------	-------	--

Coal Products—

Aniline Colours			
-----------------	--	--	--

Lisbon,			£31
---------	--	--	-----

U.S.A.,	1,340 lbs.		
---------	------------	--	--

Creosote

Konigsberg,	72 t.	10 c.	
-------------	-------	-------	--

Pitch

Oporto,	31 t.	4 c.	
Bombay,	14	5½	
Canada,	156	1¾	
Danzig,	103	8	
France,	398	5	
Konigsberg,	50		
Montreal,			£38
U.S.A.,	309	11	

Tar

Calcutta,			£40
-----------	--	--	-----

Madras,	4 t.		
Mauritius,	4	15 c.	
Canada,	216	9	
Danzig,	114		650 brls.
Konigsberg,	138		
Montreal,			50
Baltimore,	31	1¾	

Tar Oil

Danzig,	56 brls.		
---------	----------	--	--

Coal Tar Products (otherwise un-

described)—			
-------------	--	--	--

Rotterdam,	37 t.		
------------	-------	--	--

Copperas—

Bombay,	17 t.	4 c.	
---------	-------	------	--

Cottonseed Oil—

Fiume,	1 t.	7¾ c.	
--------	------	-------	--

Dextrine—

Melbourne,			£20
------------	--	--	-----

Dyestuffs—

Alizarine			
-----------	--	--	--

Lisbon,		13¾ c.	
---------	--	--------	--

Extracts

Canada,	5 t.	18¾ c.	
Lisbon,	5	14½	
Ballarat,	1	11½	
N. Brunswick,	5	14	
Sydney,	1	15	

Indigo

U.S.A.,	1 t.	3½ c.	
---------	------	-------	--

Logwood

Lisbon,	16 t.	6½ c.	
Canada,	3	12¾	

Myrabolam Extract

Barcelona,	5 t.	18½ c.	
------------	------	--------	--

Sumac Extract

Lisbon,	1 t.	8¾ c.	
---------	------	-------	--

Farina—

Rio de Janeiro,	1 t.	17 c.	
-----------------	------	-------	--

Gelatine—

Canada,	3,418 lbs.		
---------	------------	--	--

Glue—

Canada,	2 t.		
---------	------	--	--

Iodine—

Rotterdam,			£375
------------	--	--	------

Iron Oxide—

Dunkirk,	171 t.	11 c.	
----------	--------	-------	--

Lamp Black—

Mossel Bay,			£1
Sydney,	2 c.		

Lead Acetate—

Calcutta,	4	535 lbs.	
-----------	---	----------	--

Linseed Oil—

Cape Town,	166 glns.		
Jamaica,	7 t.	¾ c.	
Junin,		18	

Litharge—

Oporto,	7 t.	10 c.	
Antwerp,	1	4½	
Rio de Janeiro,		2	
Montreal,	2	4½	

Magnesium Sulphate—

Lisbon,	5 t.	13 c.	
Rio de Janeiro,		9½	
Sydney,	2	2	

Manganese Oxide—

U.S.A.,	15 t.	5 c.	
---------	-------	------	--

Manure—

Trinidad,	123 t.	12 c.	
Valencia,	50	3½	

Paint—

Algoa Bay,	2 t.	3 c.	
Cape Town,	3	19	
Mauritius,		8¾	
Natal,			£90
Pr. Louis,			1
Calcutta,	25	19¾	
Rangoon,	3	14	
Calcutta,			51
Junin,	6	¾	
Singapore,	5	10¾	
S. John's N'fd.,			78
Sydney,	11	7	
Bergen,		6¾	
Limon,			16

Paraffin Wax—

King Wm.'s Town,	2 t.	6¾ c.	
Danzig,	3	9	
Hong Kong,	1	12	

Potassium Bichromate—

Barcelona,	13 t.	8¾ c.	
Canada,	9	7½	
Oporto,	5	13½	
Antwerp,	5	8	
Ballarat,			1,126 lbs.
Calcutta,			
U.S.A.,	13	18	
Danzig,			£12

Potassium Prussiate—

Sydney,		16¾ c.	
---------	--	--------	--

Rosin—

Rio de Janeiro,	7 c.		
-----------------	------	--	--

Salt—

Shanghai,	2 t.	17 c.	
-----------	------	-------	--

Soap—

Cape Town,	1 t.	5 c.	
Canada,			£28
Colombo,	1	5	

Soda Ash—

U.S.A.,	25 t.		
---------	-------	--	--

Soda Crystals—

Calcutta,	3 t.	19¾ c.	
-----------	------	--------	--

Sodium Bichromate—

Barcelona,	7 t.	16 c.	
Canada,	2	11¾	

Sodium Bisulphite—

Melbourne,	3 t.	9¾ c.	
------------	------	-------	--

Starch—

Rio de Janeiro,	2 t.		
-----------------	------	--	--

Sulphuric Acid—

Cape Town,	1 t.	18 c.	
Rangoon,			£286

Tallow—

Penang,		3¾ c.	
---------	--	-------	--

Tin Crystals—

Lisbon,			£23
---------	--	--	-----

Treacle—

Gothenburg,	11 t.	16 c.	
Rotterdam,	33	4	
Adelaide,			£19 10s.
Bergen,	17	13	

Ultramarine—

U.S.A.,		6 cs.	
---------	--	-------	--

Yarnish—

Brishane,			£23
Calcutta,	190 glns.		
Melbourne,		18 c.	
Junin,	1 t.	18	

White Lead—

Cape Town,	2 t.	10 c.	
Huelva,	1	2½	
Oporto,	5	2	
Pt. Elizabeth,	1	4	
Calcutta,		9½	

TYNE.

Week ending April 27th.

Alkali—

Antwerp,	5 t.		
Copenhagen,	1	18 c.	

PRICES CURRENT.

WEDNESDAY, MAY 8TH, 18

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.B. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

Acids:—		£	s.	d.
Acetic, 25 % and 40 %	per cwt.	6/3	9/3	
Glacial			40/-	
Arsenic S.G., 2000°		0	15	0
Fluoric	per lb.	0	0	3 1/4
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0	10
(Cylinder), 30° Tw.		0	3	0
Nitric 80° Tw.	per lb.	0	0	1 1/2
Nitrous		0	0	1 1/4
Oxalic	nett	0	0	3 1/4
Phosphoric, 1750°		0	1	1
Picric		0	0	10
Sulphuric (fuming 50 %)	per ton	15	10	0
(monohydrate)		5	10	0
(Pyrites, 168°)		3	0	0
(free from arsenic, 145°)		1	5	0
Sulphurous (solution) S.G. 1025		3	0	0
Tannic (pure)	per lb.	0	1	0
Tartaric		0	0	10 1/4
Arsenic, white powdered	nett per ton	14	15	0
Alum (loose lump)		4	12	6
Alumina Sulphate (pure)		4	12	6
Aluminoferric		2	7	6
Aluminium	per lb.	0	2	10
Ammonia, Anhydrous		0	1	3
" 280 = 28° B.	per lb.	0	0	3
" = 24° B.		0	0	2 1/4
Carbonate	nett	0	0	3 1/4
Muriate	per ton	21	15	0
(sal-ammoniac) 1st & 2nd	per cwt.	39/-	37/-	
Nitrate	per ton	40	0	0
Phosphate	per lb.	0	0	8 1/4
Sulphate (grey) London	per ton	9	17	6
(grey) Hull		10	0	0
Aniline Oil (pure)	per lb.	0	0	5 1/4
Aniline Salt		0	0	4 1/4
Antimony	per ton	31	0	0
(tartar emetic)	per lb.	0	0	7
(golden sulphide)		0	0	10
Barium Chloride	per ton	6	7	0
Carbonate (native)		3	5	0
Sulphate (native levigated)		45/-	75/-	
Bleaching Powder, 35 %	nett	7	0	0
Liquor, 7 %		3	10	0
Bisulphide of Carbon		11	0	0
Chromium Acetate (crystal)	per lb.	0	0	6
Calcium Chloride	per ton	2	2	6
China Clay (at Runcorn) in bulk		15	10	30/-
Coal Tar Products and Dyes:—				
Alizarine (artificial) 20 %	nett per lb.	0	0	8
Magenta		0	3	9
Anthracene, 30 % A, f.o.b. London	per unit per cwt.	0	1	0 1/2
Benzol, 90 % nominal	per gallon	0	1	0
50/90		0	1	0
Carbolic Acid (crystallised 40°)	per lb.	0	0	6 1/4
(crude 60°)	per gallon	0	1	8
Cresote (ordinary)		0	0	1 1/4
(filtered for Lucigen light)		0	0	2
Crude Naphtha 30 % @ 120° C.		0	0	5
Grease Oils, 22° Tw.	per ton	2	10	0
Pitch, f.o.b. Liverpool or Garston		1	13	0
Solvent Naphtha, 90 % at 160°	per gallon	0	1	1
Lucigen and "Wells" Oils		0	0	2 1/2
Copper	per ton	42	2	6
Sulphate		15	15	0
Oxide (copper scales)		39	0	0
Glycerine (crude)		16	10	0
(distilled S.G. 1250°)		42	10	0
Iodine	nett, per oz.	0	0	9
Iron Sulphate (copperas)	per ton	1	5	0
Sulphide (antimony slag)		2	0	0
Lead (sheet) for cash		11	2	6
Litharge Flake (ex ship)		13	5	0
Acetate (white)		24	10	0
brown		14	10	0
Carbonate (white lead) pure		16	0	0
Nitrate		18	15	0
Lime, Acetate (brown)	per ton	5	10	
(grey)		8	10	
Magnesium (ribbon and wire)	per oz.	0	2	
Chloride (ex ship)	per ton	2	7	
Carbonate	per cwt.	1	17	
Hydrate	per ton	17	0	
Sulphate (Epsom Salts)	per ton	3	0	
Manganese, Sulphate		17	0	
Borate	per cwt.	2	15	
Ore, 70 %	per ton	4	5	
Methylated Spirit, 61° O.P.	per gallon	0	1	
Naphtha (Wood), Solvent		0	1	
Miscible, 60° O.P.		0	1	
Oils:—				
Cotton-seed	per ton	19	0	
Linseed		21	10	
Petroleum, American	per gallon	0	0	
Stearine	per ton	25	10	
Phosphorus (yellow)	per lb.	0	2	
(red)		0	2	
Potassium (metal)	per oz.	0	3	
Bichromate	nett per lb.	0	0	
Carbonate, 90% (ex ship)	per ton	16	15	
Chlorate	per lb.	0	0	
Cyanide, 98 %		0	1	
Hydrate (Caustic Potash) 80/85 %	per ton	21	5	
(Caustic Potash) 75/80 %		19	15	
(Caustic Potash) 70/75 %		19	10	
Nitrate (refined)	per cwt.	1	3	
Permanganate	per cwt.	2	17	
Prussiate Yellow	per lb.	0	0	
Sulphate, 90 % (ex ship)	per ton	9	15	
Muriate, 80 % (do.)		8	10	
Silver (metal)	per oz.	0	2	
Nitrate		0	2	
Sodium (metal)	per lb.	0	2	
Carb. (refined Soda-ash) 48 %	nett per ton	4	15	
(Caustic Soda-ash) 48 %		4	0	
(Carb. Soda-ash) 48 %		3	13	
(Alkali) 58 %		3	10	
(Soda Crystals)		2	2	
Acetate (ex-ship)		14	0	
Arseniate, 45 %		11	0	
Chlorate	per lb.	0	0	
Borate (Borax)	nett, per ton	18	0	
Bichromate	per lb.	0	0	
Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton		9	7	
(74 % Caustic Soda)		8	7	
(70 % Caustic Soda)		7	10	
(60 % Caustic Soda)		6	10	
(60 % Caustic Soda, cream) (f.o.b.)		6	7	
Bicarbonate		6	10	
Hyposulphite		5	10	
Manganate, 30 %		16	0	
Nitrate (95 %) ex-ship Liverpool	per cwt.	0	8	
Nitrite, 98 %	per ton	29	0	
Phosphate		14	10	
Silicate (glass)	per ton	4	10	
(liquid, 100° Tw.)		3	10	
Stannate, 40 %	per cwt.	3	2	
Sulphate (Salt-cake)	per ton	0	17	
(Glauber's Salts)		1	5	
Sulphide		8	0	
Sulphite		5	5	
Strontium Hydrate, 100 %		8	10	
Sulphocyanide Ammonium, 95 %	per lb.	0	0	
Barium, 95 %		0	0	
Potassium		0	0	
Sulphur (Flowers)	per ton	5	15	
(Roll Brimstone)		5	0	
Brimstone: Best Quality		12		
Superphosphate of Lime (26 %)		2	5	
Tallow		23	10	
Tin Crystals	per lb.	0	0	
English Ingots	per ton	68	0	
Zinc (Spelter)		14	1	
Chloride (solution, 100° Tw.)		5	7	

THE CHEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

417.

SATURDAY, MAY 18, 1895.

Vol. XVI.

Contents.

	PAGE		PAGE
ices	317	Miscellaneous Chemical Market ..	323
in Petroleum	318	Liverpool Oil and Colour Market ..	323
Companies	319	Liverpool Mineral Market	324
Notes	320	Report on Manure Material	324
Public Analysts	321	The Metal Market	324
ry Jottings	321	Hull Paint, Oil, and Colour Report ..	324
roleum from U.S.A.	321	Type Chemical Report	324
Oil Producers' Agree-	321	West of Scotland Chemicals	325
of Paraffins in Crude	321	New Companies	325
Exports for April	322	The Patent List	325
tion	322	Gazette Notices	325
Imports	322	Imports	325
Exports	322	Exports	325
monia Products	323	Prices Current	325

Notices.

Communications for the *Chemical Trade Journal* should be sent to the Editor, and Cheques and Post Office Orders made payable to—

DAVIS BROS., 32, Blackfriars Street, MANCHESTER.

Our Registered Telegraphic Address is—

"Expert, Manchester."

Terms of Subscription, commencing at any date, to the *Trade Journal*,—payable in advance,—including postage of the world, are as follows:—

Half-yearly (52 numbers) 12s. 6d.
Yearly (26 numbers) 6s. 6d.
Quarterly (13 numbers) 3s. 6d.

Subscribers will oblige by making their remittances for subscriptions by Post Office Order, crossed and payable to "Davis Bros."

Reports, and correspondence on all matters of interest to the chemical and allied industries, home and foreign, are solicited. Contributors should condense their matter as much as possible, and send only one side of the paper, and in all cases give their names and addresses, not necessarily for publication. Sketches should be sent on separate sheets.

Contributors are invited to forward items of intelligence, or cuttings from newspapers, of interest to the trades concerned.

Communications for the Editor, if intended for insertion in the next week's issue, should reach the office not later than **Tuesday** evening.

Advertisements.

Advertisements of Situations Vacant, Premises on Sale or To be Let, and Wants, and Specific Articles for Sale by Private Contract are accepted in the *Chemical Trade Journal* at the following rates:—

20 Words and under 2s. 6d. per insertion.
Each additional 10 words 6s. 6d. "

Advertisements, Announcements in the Directory Columns, and all Advertisements prepaid, are charged at the Tariff rates, which will be forwarded on request.

Advertisements intended for insertion in the current week's issue should reach the office by **Thursday morning** at the latest.

CURRENT TOPICS.

PROFITABLE EXTRAS OR EXTRA PROFITABLE?

FOR a long time there has been a great deal of soreness among pharmaceutical brethren on account of the encroachments of grocers and co-operative societies by taking up certain branches of the chemists' business. In consequence the chemists themselves took to looking about to find extras which could with profit be included in their business, and among other things analytical chemistry, more especially water analysis, was in course of time undertaken by pharmacists.

We have previously dealt with the value of such analyses, and pointed out the desirability of the Institute of Chemistry educating the public to appreciate the necessity for engaging Fellows of the Institute if they wish for the best work. We shall, therefore, refrain from further remark on this point, but the recently formed Chemists' Co-operative Society, Limited, suggests one or two points which are somewhat amusing in the light of the grievances about which pharmacists have been wont to say so much.

Up to now we have heard much about every man sticking to his trade and being content therewith. In this way the worthy pharmacist contended he would be able to carry on his business as heretofore. The action of this new company is, however, likely to turn the tables, so that the chemists will have to do the explaining while others do the grumbling.

It is rather rich for a company which represents the pharmacists as a trading body to announce its intention of prosecuting a series of businesses as extensive and diverse as the following—manufacturing, analytical, wholesale and retail chemists; druggists; manufacturing, professional, and mechanical dentists; veterinary surgeons and drysalterers. The list is, to say the least, formidable, seeing that in the usual way the first and last businesses are generally more than enough to fully occupy the attention of any one company. Of course there is nothing to prevent pharmacists engaging in such a variety of undertakings, and personally we are perfectly indifferent on the matter, with one exception, and that is with regard to the grumblings about encroachment. After this latest move we hope we shall hear of them no more, from pharmacists at all events.

THE NEW INCANDESCENT LIGHT.

In these days of keen competition nothing enjoys a monopoly long, and this appears to be the case with incandescent lighting. This week has witnessed the introduction of a rival to the existing mantle burner in the shape of the De Mare fringe burner, which is practically identical with the French Hélogène system.

The new burner differs from the Welsbach in that the burner has a much more ordinary appearance. Though constructed on the Bunsen principle the burner is much the same in size as the familiar batwing burner, and it has an

steatite tip. The fringe is suspended horizontally inum wire. It will not be very surprising to learn ation is pending, so that our remarks will have to be a certain respects.

istinctive feature, however, is the absence of any chimneys. The removal of this fertile source of ex- of importance, but there are one or two other points ve to be taken into account. For instance, though f the fringe appears to be much the same as that tle, there is no specific statement that the light does orate at all during that time.

er advantage claimed is the lessened cost, it being at the burner can be sold at a profit for about 25 less than any other known incandescent burner. this, however, the gas consumption must be placed. et down, according to an expert's report, as being ore than one-third that of a London argand. The e Welsbach is nearer one-fifth than one-third, so that sence of very clear data as to the exact gas consump- candle power per cubic foot, it is very difficult to ly gauge the value of the 25 per cent. reduction in st.

ally speaking the new burner appears to possess ntages of former burners, with the addition of one or ovements. Regarding the latter, however, we pre- ke our own investigations before expressing a more opinion.

PETROLEUM MATTERS.

ve this week some further information in regard to ion of petroleum in the States. The supply of crude prospect of improving, while the total exports for of nine months ending March, 1893, show a decided

The decline in crude amounts to over 10,000,000 In Russia the abundance of the oil is as great as is city in the States, while the unopened territory is sensive, with every prospect of richness. These ances largely compensate now for the difference be- Russian and American oils in yield of "illuminating." is a talk of the Parliamentary Committee on the n Laws resuming its sitting after Whitsuntide. Now hs of the chief witnesses have been stopped no doubt ard Co. would like this, as their exports of naphthas were over 1,000,000 gallons, as compared with about allous in March, 1894. It will be a lot of good, how- ding an "inquiry" on lamp explosions, when y the only witnesses who will be examined will be o have set themselves to prove that the lower the the safer the oil, which undoubtedly is the whole in a nutshell of those who contend that the present of 73° F. is all that can be desired. If the sittings resumed we can only hope that those who could, bring some strong arguments to the contrary, will ents be permitted to declare their convictions so as p the utter futility of an inquiry on which one side ard, owing to the omnipotence and oppression of e movers on the other.

33 " CHIMNEY.—We have long had slag paint and pave- the latest is a slag brick chimney. According to *l'Industrie* as adopted by the Courrières and Otricourt Companies, and ple is followed by the works of Arbel and Douai. The ishment planned a chimney 164 feet high and to weigh but ons, about half the weight of a brick chimney of the same . A special cement was to be used which would bind to- blocks composing the chimney so firmly as to require no on band for strengthening. This is an interesting applica- cheap industrial by-product which, should the experiments ens, will be appreciated by metallurgists.

THE POSITION IN PETROLEUM.

AN AMERICAN ESTIMATE OF THE STANDARD CO.

SPEAKING of the situation in oil, the *Progressive Age* in its for this month, says:—The Standard Oil Trust has been very low these past few years. Since its first big leap into power and universal enmity little has been heard from it. But has underneath the mantle of innocuous silence is best illustrated single incident. In 1889 a prominent concern which is considerably interested in the consumption of oil decided that it were better to trol its own supply. A deputy was despatched into all the producing states to identify and secure enough good oil-land to for their needs. His investigation of Pennsylvania, Ohio, Texas and similar territory as far west as Wyoming, revealed the absence of any purchasable oil-land of any real value. Whose was on it was not hard to guess.

Having corralled home competition, the next job was to set of Russia, whose Baku fields produce about two-thirds of that world outside of America. Incidentally, the minor United Consular agency at Batoum, Russia, has remained, notwithstanding changes in our political administrations, in charge of a man believed to have taken an active part in the long-pending negotiations looking to the combination recently effected and now only as the sanction of the Russian Minister of Finance, between the Standard Oil Company and its eminent Russian rivals. [This has since been definitely refused, but a private arrangement is improbable.—Ed., C.T.J.] While the "clinch" that the Standard has over the consuming public will probably not permit prices to their normal figure in the near future, yet the present boom, now believed, will not last long.

The production of oil has fallen off, as statistics will show, but is responsible for it? None other than the Standard Oil Company. The decreased production is unnatural, and has been influenced by if not wholly, by the magnates of the S. O., who have planned years the final *coup de main* that should make them the sole arbiters of the petroleum product of the globe. If, then, the Standard insist upon maintaining prohibitory prices for gas-oils, the result will be a large increase of coal-gas manufacture, and water-gas will be as in Europe, an enricher of coal-gas.

In connection with the foregoing, it might be interesting to recall the happening of a few years ago. At that time abundant stores of Lima (Ohio) oil were on hand, with no use for it, and the S. O. was a market for the product by influencing gas companies to adopt Ohio product. Some time later stores of naphtha accumulated, meanwhile the Lima product found outlet for other uses, when the S. O.'s emissaries were despatched among gas companies to haste to prevail upon them to return to naphtha. This move meeting with their favour so rapidly as expected, the Standard Company, rather than make concessions in price, caused thousands of barrels of naphtha to be burned!

Of one thing no doubt can exist. An action such as we witnessed in oil during the past few weeks will make more sense and incite more antagonism against corporations than a ton of oil literature on the subject. For years the Standard Oil Company has been looked upon as the common enemy of the people. Its action intensifies this feeling beyond peradventure.

INSTITUTE OF MINING AND METALLURGY.—On Wednesday a paper was read before this Institute by Mr. A. James on "Ore Practice." The meetings are held in the Geological Museum Theatre, Jermyn-street, London, S.W.

GERMAN CHEMICAL INDUSTRY.—The report of the Friedrich Dye Manufacturing Company, of Elberfeld, for the past financial states that the results of the year's working were satisfactory. increased Spanish import duties and the China and Japan war have affected the trade of the company in those directions, but, on the other hand, the Russian treaty of commerce permitted the resumption of former trade relations with Russia. A hope is expressed that the duties with Spain will in course of time be removed by diplomatic negotiations. The new works at Leverkusen are already put operation, and sulphuric, muriatic, and nitric acids are now manufactured there. Extensions to include other branches of chemical industry, and increases of the number of dye products in the existing establishments, are contemplated. All the new buildings will, it is expected, be completed during the current year. These extensions have made necessary an increase in the usually written off for renewals and repairs. The prices of the principal raw materials required have changed little during the past year. The net profit from the year's working, after allowing for the appropriations to renewals and repairs, is stated as £124,792, as against £121,068. for the previous year, and a dividend of 18 per cent. again been declared.

Reports of Companies.

MASON AND BARRY, LIMITED.

Third ordinary general meeting of the shareholders in Mason and Barry, Limited, was held on Monday at Cannon-street Hotel, E.C., under the presidency of Mr. Francis Ricardo.—Moving the adoption of the accounts, the Chairman, after apologising for the unavoidable absence of the chairman (Mr. Barry, M.P.), and the deputy-chairman (Mr. J. R. Mason), stated that the profit realised on the working amounted to £29,494. 11s. 10d., to which had to be added the balance of £2,746. brought forward from the previous year, together £32,241. 8s. 7d. After writing off £4,500. from the share accounts, and £943. 13s. 7d. for sundries, there remained a sum available for appropriation of £26,797. 15s., from which the directors recommended the payment of a dividend of 2s. 6d. per share, and forward a sum of £3,651. 5s. to the next account. The total of ore broken and raised at the mine during 1894 was 196,922 tons against 209,814 in 1893; the shipments during the same period amounted to 242,386 tons, as against 172,376 tons in the previous year, the quantity of ore sold and invoiced for its sulphur value amounted to 233,729 tons, as against 182,909 tons in 1893. They had in all less than 1,750,000 tons, from which they had extracted the ore, and that quantity alone would, at their present rate of shipment, meet their requirements for fully the next seven years. In the balance-sheet the investments were inserted at the price at which they were valued, although, as a matter of fact, had they been taken, as in previous years, at the market prices of December 31 last they would have shown a nominal profit of £6,000. Their make of copper during the past year was slightly less than in 1893, the figures being 3,221 tons of fine copper in 1894, as against 3,566 in 1893. They had now a very large supply of water, all their mines were full, and, consequently, they hoped that their make of copper in 1895 would, at least, equal their make of last year. The directors which the directors would continue to pursue would be to turn the heaps of ore lying at the cementation works, on which, as regards copper production, the royalty had already been paid. The company had recently acquired from the Portuguese Government concessions for two additional deposits of ore, exploration on which are now being carried out.—Mr. H. E. Beddington moved the motion, which was put and unanimously agreed to.—The resignation of the retiring directors and auditors and a vote of thanks to the chairman comprised the remainder of the proceedings.

LINLITHGOW OIL COMPANY, LTD.

Report by the directors for the year ending 30th March states:—Providing fully for maintenance and repairs, there is a sum at credit of profit and loss account (including balance brought forward) of £5,846. 13s. 10d. From this amount falls to be deducted £10s. 9d. for interest on debenture stock and temporary loans. Directors advise that £1,675. 10s. 3d. be applied in writing off the whole of the expenditure on capital account, and that the balance of £6. 12s. 10d. be carried forward to the current year's account. 10 per Cent. Mortgage Debenture Stock has been reduced by £1,000, plus a premium of £125., in accordance with special resolution of deed of trust following thereon. During 1894-5 prices of oils, naphtha, lubricating oils, and wax were extremely low. The price of ammonia and gas oils were in good demand, and realised more than during the preceding year. Unfortunately, costs were increased by the coal strike, which lasted from July to October, 1894. During the whole of that period the works kept going, but owing to the extremely high price paid for coal, and to the irregularity of supplies, which came mainly from Scotland, the yields of crude oil and of sulphate of ammonia were reduced. Since the resumption of work at the local coalfields normal yields have been obtained. During last month a marked improvement took place in the value of petroleum in America. The result has been felt in every market in the world, and the producers of paraffin in Scotland have unanimously agreed to raise the price 3d. per gallon. Whether the advance will be maintained is uncertain, but it is generally believed that the era of unprofitable prices has, for the time being, come to an end. Moderate advances have been made in naphtha, lubricating and gas oils. Compared with last year there has been a fall in the value of sulphate of ammonia, but the effect will be largely neutralised by lower costs. During January and February last meetings were held between representatives of the American and British producers and the candlemakers of the United Kingdom. Arrangements similar to those which were in force from 1888 to 1892 have been made, and these will prove of benefit to all the parties concerned. Expenditure upon capital account has been £1,675. 10s. 3d. The directors, with the mineral proprietors referred to in last report have ratified. The following is a copy of the balance sheet to be submitted at the annual meeting of the shareholders:—*Liabilities*.—Share

capital subscribed—20,000 shares at £5. each, fully paid, £100,000., less amount forfeited for arrears of calls, £139.—total, £99,861.; preference shares of £1. each, £27,206.; debentures, £250.; mortgage and convertible debenture stock redeemable by yearly instalments at 5 per cent. premium, £44,990. 10s.; special loans, £2,730. 15s. 11d.—total, £47,971. 5s. 11d.; bills payable, £3,778. 8s. 3d.; debts due by the company, including royalties and accrued interest, £21,302. 12s. 7d.; profit and loss, £2,262. 3s. 1d.—total, £202,381. 9s. 10d. *Assets*.—Mines, works and plant, railway, workmen's houses, &c., per last balance sheet, £164,530. 12s. 7d.; expended this year, £1,675. 10s. 3d.—total, £166,206. 2s. 10d.; sundry debts due to company, £16,662. 10s. 3d.; stock of shale, oils, stores, &c., £15,389. 12s. 5d.; cash on hand and in bank, £4,123. 4s. 4d.—total, £202,381. 9s. 10d. The following gentlemen have been appointed directors:—Mr. Andrew Landale, chairman; Sir Charles Tennant, Bart.; Mr. John Brownlie, Mr. R. R. Prentice; secretary, Mr. John Young.

THE SANTA RITA NITRATE CO., LTD.

The report of the directors for the year 1894 states that the net profit amounts to £11,802., to which has to be added £4,903. brought forward from the last account, making a total at the credit of profit and loss account of £16,706., out of which the directors recommend the payment, on the 16th inst., of a dividend of 10 per cent. (less income tax) for the year, leaving a balance of £7,076. to be carried forward. A profit of £177. on exchange has been added to the exchange reserve account, which now stands at £384. The cost of production has been higher than in 1893, owing to labour difficulties and the rise in exchange in the latter months of the year, and the profits have further been affected through delays in the shipment of nitrate at Junin, in consequence of which material prejudice was sustained by the company. The whole of the stock of nitrate afloat at December 31 last has since then arrived and been paid for.

THE PACCHA AND JAZPAMPA NITRATE CO., LTD.

The report of the directors to December 31 last states that the accounts now presented show a gross profit of £43,950., against £46,516. during a similar period last year. The net profits available for dividend amount to the sum of £43,270. Out of this the directors have paid an interim dividend of 5 per cent. for the half-year ended June 30, 1894, leaving a balance of £25,887. available for distribution, and they now recommend the payment of a further dividend at the rate of 4 per cent. for the half-year ended December 31, 1894, making 9 per cent. for the year, and leaving a balance of £11,980. to be carried forward to the next account. In the statement of accounts for 1893 the amount carried forward was £3,433., whilst this year it is proposed to carry forward £11,980. The directors have deemed it prudent to carry forward this year a much larger amount than that carried forward last year in consequence of the decrease in the market price of nitrate of soda which has taken place since the period to which the present accounts have been made up. The accounts now presented have been made up at an exchange of 13½d.; the present rate of exchange is about 17d. per dollar. The machinery and plant have been maintained in a perfect state of efficiency, and during the period covered by the report both *oficinas* have been working satisfactorily.

DIVIDENDS.

Colorado Nitrate Company.—A dividend of 4 per cent. has been announced, payable on the 15th inst., making, with 4 per cent. paid 15th November last, 8 per cent. for the year.

Liverpool Nitrate Company.—A dividend of 15 per cent. has been announced, payable on the 15th instant, making, with 15 per cent. paid 15th November last, 30 per cent. for the year.

FRUITLESS OIL DRILLING IN THE STATES.—Concerning petroleum production in the States it is advised from New York that thus far the results of drilling operations have not added materially to the production, no wells of exceptional producing capacity being reported, and with the incoming of each new well the prospects of discovering a new pool of magnitude decrease.

FIRE AT DRYSALTRY WORKS.—A fire occurred last week at the drysaltry works in Hewitt-street, Gaythorn, Manchester, of Mr. John Crampton. The brigade from the chief fire station, under Mr. Savage, was called and was quickly in attendance. Dense volumes of smoke were coming from the building, and the heat was great. In spite of suffocating fumes, the firemen effected an entrance and, dragging their jets inside, were able to confine the fire to the basement. Considering the fact that the building had five floors, including the basement, the damage done was comparatively small. The basement and its contents were seriously damaged by fire and water. The ground floor suffered in a less degree from the same causes, and damage was done by the smoke to the upper floors. The brigade subdued the fire in the course of about an hour. The origin of the outbreak was the overheating of a drying-room.

Cultural Notes.

APPLICATION OF FERTILISERS.

appeared recently in the "New York Times" notice of fertilising crops. The word theory is misunderstood. It does not imply a speculation, but is an exposition of the general proceeding, the *Mark Lane Express*, in that the introduction of fertilisers for the of those occurrences which come at a time for them, and after we have got used to them we got along without them. The farmer who needs of plant food, and attempts to depend on what he can make in his stable, must lose a full possible income from his farm and his work.

Now. No farmer ever had, and never can or could make use of, or that his land needs or poses of. But by the use of fertilisers it is to exert its full productive power and ability, if this is thus because plants grow by food, to be trained to use more nutriment by due otherwise. The only thing for the farmer kind of food the crop requires to become the most productive and profitable. And that the yield of some crops by the use of water than was ever known by the use of because manure is not an easily digested and soluble; but fertilisers, being quickly crops and made use of to the fullest extent. These figures, which give the amount of plant and in 500 pounds of a fertiliser which consumed by plants, and is thus not only a substitute useful and complete plant food:—

	Nitrogen	Potash.	Phosphoric
	Pounds.	Pounds.	Acid.
	Pounds.	Pounds.	Pounds.
.. .. .	45	52	21
.. .. .	28	34	45

are nitrogen and potash, but much less of the under certain circumstances it would be well to a sufficient quantity of phosphoric acid to any crop. But, unfortunately, the manure decay and make the food elements available so easily soluble that the plants begin to hours after they have been applied to the as above mentioned will cost about the same, after to use the artificial fertilisers for immediate on the slower manure.

the character of some leading crops and see needed for a full yield:—

	Nitrogen.	Potash.	Phosphoric
	Pounds.	Pounds.	Acid.
	Pounds.	Pounds.	Pounds.
.....	56	58	25
it	45	28	22
ats	52	38	19
ls potatoes ..	67	76	26
.....	102	87	25

at, as the manure does not become available part, ten tons of it is wholly inadequate for average yield, and this fact may be taken as average of crops is so small. But it is seen available the first season, it is very easy to as may be required for any special crop. But every element in the full quantity named, usually contains, unless it has been considerable supply of plant food, perhaps enough as only a certain quantity is needed in the quite within the judgment of the intelligent are up his needs for the crop he desires.

the yields of 100 and 200 bushels of corn 40 of of potatoes have been produced to the acre then no possible quantity of manure that would surmounting disease by the excess of decaying it could have been used. Experience has thus it is that those farmers who produce itable crops use these artificial manures in manures.

at every farmer should abandon the use of the contrary, he should make as much of it the fertilisers he can procure.

at researches of Dr. P. Wagner this is not any instances it has now been shown that

manure has an anti-nitrification action for which up to now the fertiliser has been blamed as being "no good."—(Ed. C. T. J.)

POISONING OF CATTLE BY NITRATE OF SODA.

At the time of year when nitrate of soda is being used as top-dress a word of warning as to its effects upon live stock may not be out of place. Two years ago a number of cattle died rather suddenly on a farm in South Lincolnshire, and an inquiry into the circumstance the case left no room for doubt that death arose from the eating nitrate of soda which the animals obtained from bags which had been used in conveying this fertiliser into the field, and had afterwards left lying about. More recently a case has occurred on a farm in Massachusetts in which 11 cows out of a herd of 15 died as a result of having had given to them nitrate of soda in mistake for common (chloride of sodium). The 15 cows had been out at grass all day, were driven to the stalls in the evening, when an attendant gave them except two what he supposed to be common salt, thoroughly mixed with a small quantity of wheat bran. Apparently, all the animals ate heartily. Two hours later the cows attracted notice by the noise they were making, and when examined they were found to be uneasy and evasive in pain, and several died within an hour or two. The only skilled advice obtainable was that of a medical practitioner who, thinking the case was one of arsenic poisoning, prescribed accordingly, but the morning eleven of the cows were dead. An examination of sample materials collected from the mangers, from a pail containing a mixture of bran and salt that had been taken from the mangers, and from various other places, revealed the presence of large quantities of nitrate of soda but no common salt. An analysis of the contents of the stomach failed to reveal any trace of arsenic, lead, or other mineral poison.

Nearly 20 years ago somewhat similar cases were recorded in the *Archives Vétérinaires*. A horse had drunk freely of a solution of nitrate of soda, and exhibited many of the symptoms that were subsequently noticed in the Massachusetts cattle; the administration of infusions of coffee and alcohol and irritant clysters relieved the animal which in a few days completely recovered. In another case four bags of nitrate of soda had been placed at equal distances on a grass field and allowed to remain some five hours before being applied. Meanwhile, some of the nitrate had become washed from the bags upon the ground by a fall of rain. Three days later cows were turned into pasture, and obtained the salt by licking it from the herbage in the vicinity of which the bags had stood. They showed symptoms of poisoning, but ultimately recovered. One other case worth noting that in which 200 bags which had contained nitrate of soda were washed in large tubs of water close to which the cattle passed on their way to the pasture. A few hours afterwards many of the cows were seen to be ill, and within eight hours two of them had died. They turned out to be the first two that had left the stalls, and consequently had time to drink more of the solution than the others. These cases all serve to show that care should be exercised upon stock farms in the handling of nitrate of soda, and there is no better period of the year than the present for enforcing the lesson.

WHY THE NITRATE COMBINE WAS NOT RESUMED.

At the annual meeting of the shareholders of the San Sebastian Nitrate Company, Limited, the Chairman, Mr. A. R. Roberts made the following statement about the nitrate combine:—Last year you will remember, I told you that there was no combination of nitrate producers made, because, as a matter of fact, there was no need for it. It was quite clear that the consumption of the world would be quite as much as the West Coast of South America could produce. However, some very large new works were opened, and a great amount of Government grounds were sold, so it became evident that something would have to be done to restrict the production of this year, so as to bring it to about the same figure as the consumption. For a long time everything went perfectly well. Negotiations were opened with the coast, and, in fact, the proposal that a combination should be made came from the coast producers, who entered into line with us. We were most anxious to make this combination, when something like a bolt from the blue came, two of the English companies saying, "We have grounds which seemed plausible enough, that they would only enter into the combination if everybody came in on the same basis, known as they must have known, that in any combination that has ever been made there has always been some give and take, chiefly on the part of the coast producers. Every endeavour was made to get them to put their minds upon this matter, and to fall into line with the other English companies; and I may say that it was the first occasion, I think, in the five years existence of the permanent nitrate committee that any English company has attempted in any way whatever to ask for terms which they must have known would eventually end in breaking up the combination. Hitherto our difficulties have been with the coast producers, and I regret very much that the difficulties should in this case have been transferred to London. It subsequently transpired that the two companies I refer to had sold very largely ahead—that they had sold the greater part of the quantity that they were going

this year. They did not sell what they had produced, but they said, and they said it did not matter to them whether there was a sale or not. I am not going to say what my opinion of this is, and I leave it to you to judge for yourselves. Immediately it was known that no combination would be made this year prices fell, and have reached a point now which, combined with the cost, on account of the exchange of Chili having risen from 5d., makes it very difficult, especially for the smaller concern will not say to make money, but to make as much money as been making in previous years from nitrate. It is to be hoped that our counsels may prevail, and that next year we shall not be in so very disagreeable a position from no fault of our own. I think it right to mention that certain rumours have reached me have heard them in the City from several persons—that the about the combination and the opposition to it was on the Colonel North. I think it due to Colonel North to say—and he will be able to bear me out in this—that from the beginning Colonel North has always treated the smaller companies with due regard. He has always said that he is perfectly prepared to go into the combination on the same terms as any other English companies. In fact, a resolution to that effect was passed at one of our meetings, and the only dissentients were the companies to which I have referred.

IMPORTANT TO PUBLIC ANALYSTS.

(SPECIALLY CONTRIBUTED.)

Jewellers and Sanitary (Public Health) Committee of the Camberwell Vestry, the largest ecclesiastical district of London, has had under consideration a subject of interest and importance to public analysts. At a recent meeting of the Vestry, in consequence of attention having been drawn to the subject, it was resolved that the resolution of 1875, fixing the number of samples to be taken and the amount received by the public analyst, be altered, that the number of samples to be taken annually be increased to a minimum of 500 and the Public Analyst (Dr. Teed) be paid, subject to the approval of the Government Board, a salary of £200. for analysing 500 samples. Since then Dr. Teed has written to the Committee, pointing out that he has had no opportunity of being heard on the Vestry's fresh resolution, which meant that 300 extra samples had to be analysed for him at £42. 10s. more than he had been receiving, or at the rate of 14s. 9d. per sample, out of which sum he had to provide gas, water, appliances, and laboratory. He further points out that he has been an analyst to the Vestry for some years, during which time he has never been upset, and that a single mistake on his part, from carelessness or want of skill, might have cost the parish his yearly salary. In asking the Vestry to reconsider its decision, Dr. Teed states that if 500 samples were submitted to him on the agreement the salary would be £275. 12s. 6d., and that he proposed reduction of this sum to £200. is not to be taken as an indication that the Vestry is dissatisfied with his services in the past. The Government Board has been informed of the resolution passed by the Vestry at its last meeting with reference to the matter, and in reply has intimated to Section 10 of the Sale of Food and Drugs Act, which states that the remuneration of an analyst is not subject to the approval of the Board, but is to be such "as shall be mutually agreed upon" between the officer and the vestry, which has not been done in the present proposal. If an average is taken for the years of the whole of the Metropolis (with the exception of the City, which pays its analyst £200. for analysing 300 samples), it would (the report of the Committee states) that a fee of 14s. 9d. for each sample which is analysed, whereas this Vestry only pays its analyst a sum of 8s. for each sample analysed. The fee formerly paid to Dr. Teed was £157. 10s. for 200 samples, or 7s. 10d. per sample, and the Committee's recommendation is that 11s. be paid for each sample. The average fee of 14s. 9d. quoted takes no account of laboratories and appliances, or assistance in certain cases, nor of a sum of £25. given by Hammersmith in lieu thereof. The Committee, having carefully re-considered the matter, were of opinion that their original recommendation was just and just one, and asked the Vestry to adopt the following resolution:—"That the number of samples to be taken annually be increased to a minimum of 500 as and from the 26th day of March, the Public Analyst, Dr. Teed, to be paid a salary of £275. for analysing 500 samples, and a further sum of 7s. 6d. for every additional sample analysed; and that the resolution of the Vestry of the 10th of 1895, fixing the number of samples to be taken and the amount received by the Public Analyst, be varied and altered accordingly. At a special meeting of the Vestry on Wednesday, May 8th, the recommendation was moved but negatived, inasmuch as the two-thirds majority to rescind the previous resolution did not

Parliamentary Gleanings.

OIL LAMP EXPLOSIONS.

[IN the House of Commons on Tuesday, in answer to Mr. W. Johnston,

Mr. Asquith said: I have consulted my right hon. friend who presided over the Select Committee on Petroleum last session, and, although I am unable to give a definite assurance at present, I hope it may be found possible to re-appoint the committee after Whitsuntide with a view mainly to considering the question of dangers arising from explosions of oil lamps.

BOARD OF AGRICULTURE JOURNAL.

In answer to Mr. Radcliffe Cooke, Mr. Gardner said: For the reason stated by my right hon. friend the President of the Board of Trade in reply to a similar question with reference to the publications under his control, I am not in a position to give particulars of the present circulation of the *Journal of the Board of Agriculture*, but I may say that we are well satisfied with the results obtained up to the present, and that the circulation has considerably exceeded the estimate we originally made. We have taken steps by the issue of special notices and advertisements and the distribution of copies gratuitously to make the journal known to the classes interested, and in fixing the price as low as 6d. we hoped to bring it easily within their reach. I should be only too glad to consider any suggestion as to the means by which its utility could be increased.

Mr. James Lowther asked whether the right hon. gentleman would lay on the table a statement showing the financial position of the journal.

Mr. Henniker-Heaton: May I ask, does the right hon. gentleman decline to state the number of copies printed and sold?

Mr. Gardner: It has never been the practice of the Department to do so.

Mr. James Lowther: I will move for it.

Mr. Radcliffe Cooke asked if the journal could be obtained on the railway bookstalls?

Mr. Gardner: I have endeavoured to bring that about, and am in communication with Messrs. Smith on the subject.

EXPORTS OF PETROLEUM FROM U.S.A.

THE Chief of the Bureau of Statistics, Washington, gives the following returns of the exports of petroleum and petroleum products for March. The total shipments were 59,798,815 gallons, compared with 70,395,601 gallons in March, 1894. The total for the nine months ending March, 1895, was 671,005,804 gallons, against 683,182,215 gallons during the same period in 1894. The details of the shipments are as follow:—

CRUDE PETROLEUM.		Gallons.
Total, March, 1895	.....	10,160,190
" " 1894	.....	12,450,893
NAPHTHAS.		
Total, March, 1895	.....	1,031,416
" " 1894	.....	519,423
ILLUMINATING.		
Total, March, 1895	.....	44,889,370
" " 1894	.....	54,542,080
LUBRICATING AND PARAFFIN.		
Total, March, 1895	.....	3,671,951
" " 1894	.....	2,881,613
RESIDUUM.		
Total, March, 1895	.....	46,788
" " 1894	.....	1,592

THE RUSSIAN OIL PRODUCERS' AGREEMENT.

ACCORDING to the *Bourse Gazette* of May 13th, the Baku kerosene manufacturers have arrived at the following agreement for the establishment of a union of Russian kerosene manufacturers:—The union is formed for a period of four years. After the expiration of two years it will be open to any member of the union to propose any modification in the agreement. As regards the report that the American petroleum ring has concluded a contract with the Russian union of kerosene manufacturers, the *Grashdaniu* and the *Herold* remark that a private understanding of such nature is quite possible, but that the agreement will not receive any official confirmation, because the Minister of Finance does not consider it in any way necessary.

ESTIMATION OF PARAFFINS IN CRUDE ANTHRACENE.

A method has recently been devised for the estimation of crude anthracene by Herrn Heusler and Herde. The process depends on the complete solubility of crude anthracene with the exception of the paraffin in acid (HNO_3). According to a number of experiments conducted in order to test the reliability of this new method by tar distillers' and dyers' chemists, the results are satisfactory accordance with those obtained by the old method employed. In addition it is contended that the estimation of paraffin can be more conveniently and speedily executed. The method of procedure as advised by the authors: Grammes of the crude anthracene are weighed off into about 150 c.c. capacity, which is surrounded with ice. Nitric acid is then introduced drop by drop, in the amount of 2 c.c. to every 2 grammes of crude anthracene. When the acid has been added as directed, a complete solution of the anthracene will have been obtained. The flask is then warmed on a water bath or a short while until all the paraffin is melted. After the paraffin can be collected on a small asbestos filter, where it is washed with fuming nitric acid until a drop of the filtrate gives no color. A thorough washing with water is next given, and the filtrate no longer gives an acid reaction with blue litmus paper. The filtrate is then placed under the funnel, the paraffin is removed into it with alcohol, and finally with ether, which has been dried.

The solution is then transferred to a weighed porcelain dish, and is evaporated on the water bath, after which the ethereal oil, and the ether allowed to evaporate in a warm place. The residue is left to dry for half-an-hour at a temperature of 110°C , allowed to cool in the desiccator, and

IMPORTS AND EXPORTS FOR APRIL.

Trade returns for the past month are on the whole favorable. The values of the imports of chemicals and oils are higher. There is also an increase of 3.9 per cent. in the value of foreign and colonial produce.

IMPORTS OF FOREIGN AND COLONIAL PRODUCE.

ARTICLES.	Quantities.	
	1894.	1895.
..... Cwt.	103,687	73,366
Regulus..... Tons.	12,277	17,197
..... Cwt.	51,585	50,572
..... Cwt.	80,087	42,383
..... "	7,074	10,942
..... "	43,444	33,453
..... "	31,999	64,075
..... Cwt.	24,851	22,414
..... Gall.	11,928,146	14,907,872
..... Cwt.	—	13,758
..... Tons.	6,311	6,384
..... "	25,530	38,078
..... "	51,416	70,182
..... Cwt.	97,856	108,940
..... "	224,979	191,097
..... Tons.	24,172	21,033
..... "	21,421	21,509

IMPORTS OF BRITISH AND IRISH MANUFACTURES.

ARTICLES.	Quantities.	
	1894.	1895.
..... Cwt.	465,990	484,611
..... Tons.	38,831	36,115
..... "	3,008,208	2,420,693
..... Cwt.	80,653	105,252
..... Tons.	240,351	225,459
..... "	26,604	26,187
..... "	6,743	5,821
..... "	91,563	57,104

BURNED DOWN.—On Monday night a destructive fire broke out at the Anaglypts Paper Mill, Darwen, and damage amounting to £10,000 was done. The fire originated from an unknown cause in the machinery of the building. The premises were soon reduced to a mass of ruins.

GOLD PRODUCTION.

The Crown Reef Gold Mining Company, Limited, report the following results for April:—From mill, 6,928 ounces; from cyanide works, 2,994 ounces; from old cyanide works (tailings and slimes), 264 ounces.

The Langlaagte Estate and Gold Mining Company report the following results for April:—160 stamps, 20,155 tons, 8,558 ounces; from tailings, 2,779 ounces, and from concentrates 1,866 ounces; total gold recovered, 13,203 ounces.

The Van Ryn Gold Mines report result of working:—Van Ryn with 50 stamps, from 4,200 tons, 2,200 ounces; from 6,000 tons, 1,000 ounces cyanide works; total yield 3,200 ounces.

The Wemmer Gold Mining Company, Limited, is in receipt of a telegram advising result of work done during April:—4,810 stamps, yielding 3,687 ounces gold—40 stamps, working 284 and from cyanide plant 4,250 tons treated, yielding 976 ounces; 212 tons concentrates caught, assaying 82 dwt. (40z. 2 dwt.)

Last month's crushing of the Nigel Gold Mining Company yielded 2,025 ounces; cyanide, 1,773 ounces; re-treatment works, 265 ounces; total, 4,063 ounces.

The Roodepoort United Main Reef Gold Mining Company, Limited, report for April:—6,120 tons, produced 3,343 ounces; cyanide, 1,000 ounces; total, 4,472 ounces; profit for the month, £8,100.

The Henry Nourse Gold Mining Company report crushing for April:—2,086 tons, produced 1,540 ounces; cyanide, 1,500 ounces; total, 3,040 ounces.

The Rand output for the past month is the largest ever known, being 186,323 ounces. An increase of 1,378 ounces upon March, and 17,000 ounces upon the production in the same month last year.

Trade Notes.

A NEW CHEMICAL WORKS ON THE TEES-SIDE.—We learn on good authority that Messrs. Brunner, Mond, and Co. have practically decided to establish a large chemical works on Tees-side to enable them to transform brine into chemicals direct. It is calculated that the works alone will annually deal with brine equal to 200,000 tons of salt. Negotiations have been pending for some time, and are now all completed.

MERSEY JOINT COMMITTEE v. SALFORD.—On Wednesday, in Queen's Bench Division, before the Lord Chief Justice and Mr. Justice Charles, the Mersey and Irwell Joint Committee appealed from the decision of the Salford County Court judge, who dismissed a summons against the Salford Corporation under the River Pollution Act of 1893 on the ground that the plaintiffs had no jurisdiction now that the Ship Canal took the place of the Irwell and Mersey as far as Warburton. One side contended that the Irwell canalised was still within the jurisdiction of the plaintiffs; while on the other hand it was contended that the Ship Canal was not a tributary or portion of a river. The Lordships, after reserving their decision, gave judgment on Thursday in favour of the Joint Committee, thus reversing the decision of the County Court judge. Leave was given to the Corporation to apply for a full report will appear in the next issue.

PERSONAL.—Professor P. T. Austen, of the Brooklyn Polytechnic Institute, N.J., appears to be doing a great deal of good work in furthering technical chemistry and science generally. Early in the year he delivered a series of popular lectures on the elements of chemistry and their application to the arts and sciences. Last season's course was attended by 350 persons, of whom 75 came from the Edison Electric Works.

THE WEAVER TRUST.—The Committee of the House of Commons presided over by Mr. Stuart, met a few days ago to consider the competing bills promoted by the existing Weaver Navigation Trustees and Salt Union for the reconstitution of the trust. Mr. Cripps, Q.C., appeared for the Salt Union, stated that since the last sitting of the committee the various parties had consulted, and had agreed to consolidation of the two bills, as had been suggested by the committee and as they were authorised to do by a resolution of the House of Commons. In the amalgamated bill, clauses had been inserted giving effect to the decision of the committee. There was only one difference between the promoters and the committee. In their decision the committee had expressed the opinion that not more than six representatives should be given to one trading interest, but when they came to vote on that out they found it difficult to make any alteration in the proposed representation of the Salt Union, which had seven representatives on the board. They had therefore maintained that number in the amalgamated bill. All the parties acquiesced in this arrangement. The committee agreed to accept this variation from their decision, and passed the preamble of the bill. They then went through the clauses which were agreed to, and the bill was ordered to be reported to the House.

FORMATION OF SULPHUR IN PYRITES.—We are requested by Mr. G. Lunge to state that he intends making a complete reply to Hadding's paper on this subject. The same will appear in these columns in due course.

IOUS OIL FIRE AT BAKU.—According to information from St. Petersburg, a great fire occurred on Tuesday at Messrs. Rothschild's new factory at Baku. The flames spread to the oil reservoirs and furiously for some time. A considerable amount of damage was

RECOVERY BY THE MACARTHUR PROCESS.—The directors of the African Gold Recovery Company state that 53,500 oz. of gold were recovered at the Rand, and 9,400 oz. in other districts—52,900 oz.—during April by means of the MacArthur-Forrest process. The March total was 62,500 oz.

COLLAPSE OF A CHIMNEY.—During the gale that prevailed on Tuesday, a brick chimney, 100 feet high, at the Hardshaw Brook Coal Works, St. Helens, belonging to the United Alkali Company, was blown down. The chimney fell on to the waste land near the building. No damage was done.

G. FUR CHEM. IND. MANNHEIM.—The contract of this with Mr. Hugo Lorenz having expired, we are informed that the firm has appointed Messrs. Brummerstaedt and Lüdgers, 60, Mark-lane, their London representatives. Messrs. F. S. Bailey and Co., Manchester, and Messrs. C. Schneider and Co., Glasgow, continue to act in their respective districts.

SALE OF CHILIAN NITRATE GROUNDS.—The long advertised sale of the nitrate properties by the Chilean Government has been held. Five lots were sold, all being bought by Chileans. The grounds sold were of Santa Adela, Santa Ana, Agrounds, Abra, and Quiroga, for £108,092. The value of the unsold property amounts to £70,000. Property to the value of £628,000 was sold at the last auction.

INTERESTING EXPERIMENT.—The following lecture experiment showing that chlorine will attack mercury is described by Mr. C. J. Ward in *Nature*:—Mercury is shaken up in a covered glass jar with chlorine. On shaking, the sides of the jar and also the glass become coated with a continuous film of mercury, as though the jar were silvered. After a short time the film was eaten through, leaving holes of the white chloride produced.

PROBLEM FOR INCANDESCENT LIGHTING.—The problem of employing a new principle similar to the incandescent lamp has, it is stated, been solved with great success by a Berlin firm. Experiments have just been carried out in presence of the Prussian Ministers Herren Berlepsch, Miquel, and Hammerstein, which are reported to have been completely satisfactory. If this news is confirmed, it will prove of enormous importance to the German spirit in which has recently been in *extremis*.

INTER-IMPERIAL POSTAL ROUTES.—The Earl of Rosebery received a deputation from the Associated Chambers of Commerce in London, to discuss the resolutions adopted by the International Colonial Conference held at Ottawa, advocating inter-imperial postal and telegraphic routes between this country and the colonies and between colonies themselves respectively without such routes passing through third countries. It is intended to urge upon the Government the necessity of aiding as far as possible the proposals of the Congress.

STIFFENING LARD.—At the sitting of the Committee of the Commons on food products adulteration on Tuesday, Sir Walter Foster presiding, Mr. Nicholas Kilvert, provision merchant and lard refiner, of the Manchester Chamber of Commerce, said he was in favour of an alteration of the Food and Drugs Act to make it legal that five per cent. of beef stearine should be added to American lard for stiffening purposes. The addition of the stearine would be in no way injurious, and the existing prohibition against the cost of lard to the public. In four cases of prosecution against retailers who sold lard supplied by his firm they defended the lard in each case they were successful, and proved that the lard was not wrong, but it cost them £425.

LIVERPOOL SALT SHIPMENTS.—The shipments of salt to the States during April amounted to 6,400 tons, as compared with 6,100 tons in the corresponding month of last year. The total for the first four months of 1895 was 29,772 tons, as against 11,914 in 1894. British American shipments also show an improvement, 6,968 tons being shipped during the month, as compared with 4,712 tons in April last year. Calcutta shipments have been 10,886 tons, a heavy increase on the 42,942 tons shipped the previous April. For the first four months the figures are 38,476, as against 62,263 in 1894. Burmah has shipped 1,248 tons, as compared with 3,919 last year, and for Concomports 5,947 tons are recorded, against 7,060 shipped during April 1894. The total shipments from Liverpool and Runcorn for the first four months have been 48,879 tons, with 114,419 tons for the first three months of the year, as compared with 80,869 tons for April and May of the first quarter of 1894.

THE ECONOMY OF SULPHATE FOR MANGOLD GROWING.—Some valuable experiments on the economy of sulphate of ammonia as a mangold manure are being carried out by the Agricultural Department of the University Extension College of Reading; the tests being gauged by the effects of other artificial and natural manures on the same kind of land and with similar crops. The results of the experiments with mangolds, as carried out in Hampshire, are already to hand. One plot which was not manured at all, gave 19 ton 17 cwt. 96 lbs. per acre a very large yield. A second plot, dressed with 2 cwt. of nitrate of soda, 3 cwt. of superphosphate, 2 cwt. of kainit, and 3 cwt. of salt per acre (costing in all £1. 19s.), gave only 13 cwt. more than the unmanured plot. On the third plot, with 2 cwt. of sulphate of ammonia substituted for the 2 cwt. of nitrate of soda (the cost being £2. 7s. 6d.), the increase was 1 ton 14 cwt. On the fourth plot, 20 tons of farmyard manure were added to a similar dressing as on the second plot (the cost being £6. 9s. per acre); and the increase over the unmanured plot was 8 tons 5 cwt. On plot No. 5, the sulphate of ammonia was again substituted for the nitrate of soda, and 20 tons of farmyard manure added (the cost being £6. 17s. 6d. per acre), and the increase over plot No. 4 was 1 ton 2 cwt. It will be seen from these experiments, so far as they have gone, that sulphate of ammonia has proved itself a better nitrogenous manure for mangolds than nitrate of soda.

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzols are very dull and easy. Carboic acid, however, is firm, especially crude 60%, which is quoted at 8½d. Crystals, 40%, continue at 6¼d. per gallon. Naphthas, both crude and solvent, are unaltered in price, and fairly steady. Pitch firm at 35s. 6d. to 36s., f.o.b. East Coast.

Sulphate of ammonia has been much firmer during the week, and prices have been advanced. The market closes steady at a slight reduction. Considerable forward sales have been made in the North, and also at London. Quotations are:—London outside makes £10. 2s. 6d., Liverpool £10. 2s. 6d., Hull £10. 1s. 3d., and Leith £10. 1s. 3d. to £10. 2s. 6d.

MISCELLANEOUS CHEMICAL MARKET.

The market for alkalies is steady, and there has been no movement at all to record in prices for the past week. Generally, for export the demand is fair, both in caustic soda, alkali, and bleaching powder. Bleaching powder £7. per ton, free on rails makers' works, and £7. 7s. 6d. to £7. 10s., hardwood, f.o.b. Liverpool; export price, f.o.b. Newcastle, £7. to £7. 5s. per ton. For caustic soda the nearest values for spot delivery are as follows:—F.o.b. Liverpool, 77%, £9. 7s. 6d.; 74%, £8. 7s. 6d.; 70%, £7. 10s.; 60%, £6. 10s. per ton, 10-ton lots and upwards. Ammonia alkali £2. 17s. 6d., bags, f.o.r. makers' works, and £3. 5s., casks, f.o.b. Soda crystals continue quiet, and price unchanged. Chlorates of potash and soda are without any movement, and can be bought respectively at 4½d. and 6½d. per lb. Sulphur quiet, and price unchanged at £3. 12s. 6d. per ton, f.o.r. Sulphate of copper firm at £15. 10s. to £15. 15s. Nitrate of soda is easier at 8s. 3d. per cwt. for prime qualities. Potash, caustic and carbonate, are still in active demand, and values are well maintained. White powdered arsenic scarce, and price firm at £14. 12s. 6d. to £14. 15s. nett, f.o.r. Garston. Brown acetate of lime is firmer in tone, and no actual advance in price—stocks are fairly considerable. Values of other acetates also remain at a low level, and without any prospect of early improvement. Yellow prussiate of potash is weak at 7½d. to 8d. per lb. Prussiate of soda 6¼d. Cyanides in smaller demand, and lower in price. For carboic crystals there is an active inquiry, and some large business has been done at the higher rates; price is firm for 39/40 at 6¼d. Borax and boracic acid still continue to give way a point or two in price. Alum salts generally quiet, and of a lower tendency. Chemicals, as a whole, are reported flat in all quarters.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil keeps very quiet, transactions being scarce. Olive is steady in price, with a fairly good inquiry. Linseed is firm, at 21s. 3d. to 21s. 6d. per cwt. for Liverpool makes in export casks. Cottonseed keeps steady, without change in prices, which continue at

18s. 3d. to 18s. 9d. per cwt. for refined Liverpool, and 18s. to 18s. 3d. for American, according to quality. Castor oil is steady with a good market, last quotations holding good for both Calcutta seconds and first pressure French. Resin is steady, with a good demand for common at the slightly easier rates now quoted. Tallow is practically unchanged. Spirits of turpentine have advanced again to 23s. per cwt., and are steady thereat. Petroleum keeps steady, at 5¼d. to 9d. for American, according to quality, and 5¼d. per gallon for Russian refined.

COLOURS are steady, without alteration in prices. Ochres: Oxfordshire, common, £10., medium, £12., best, £15. Derbyshire, common, 40s.; medium, 50s., best, 60s.; Welsh, best, 9s., seconds, 50s., and common, 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Umber: Turkish quiet; Devonshire, 50s. to 55s. White lead, £16. Red lead unchanged. Venetian red, £6. to £10. Cobalt: Prepared oxide, 9s. 9d.; black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2, 2s. 6d. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide, £22. 10s. to £25.

LIVERPOOL MINERAL MARKET.

Our market has maintained its firm tone, and some minerals have decidedly improved. Manganese: There are no arrivals to report this week, but whilst sales have improved, the prices have remained unaltered. Ground manganese is in good demand at £6., £8., £10., and £12. 10s. per ton, according to quality. Manganiferous ore is rather slow, but prices are still unaltered. Bauxite: The demand continues to increase, especially for Irish Hill brand, for the manufacture of aluminium; prices are unaltered at 20s. per ton for first quality, 16s. per ton for second quality, and 12s. per ton for third quality, f.o.b., in cargoes. Chrome ore: The arrivals are slow and small, whilst the demand is strong; prices, therefore, are firm at 70s. per ton for 40% lump ore, and 110s. to 115s. per ton for 50% ore. French chalk: Importations are considerably reduced, whilst spot stocks are run down, and prices are consequently firm, with a good demand for the future; "Angel White" and "Gold Medal" brands, 70s., 80s., 90s., and 110s. per ton. Tungsten-metal and alloy are firm at 1s. 10d. to 2s. per lb. Chrome alloy is in strong demand at £20. per ton for 20% to 25%, with other grades in proportion. Plumbago is selling freely at £5. to £6. per ton. Arsenic is steady at £16. 10s. per ton. Carbonate of barytes is somewhat easier, but prices for lump and powdered remain firm. Sulphate of barytes continues in good demand for both the lump and powdered, and prices have an advancing tendency. China clay: A fair business is being done at 25s., 30s., 35s., and 40s. per ton, according to quality. Bog ore is steady at about 22s. 6d. per ton f.o.r. Rottenstone is quiet, at unaltered prices: £10. to £15. per ton, according to quality. Red oxides are in demand for the higher qualities at 7s. 6d. to 15s. per cwt. Ochres, J.C., at 60s., and other grades according to quality; umber, prime levigated, 40s. to 60s. per ton, f.o.r., in bags.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron, quiet: Scotch warrants closed at 43s. 9d., Middlesbrough 35s. 6d. cash, and hematite 44s. 3¼d. Copper, steady: Chili bars, G. O. B.'s and G. M. B.'s, closed at £43. 18s. 9d. to £44. 3s. 9d. cash, and £44. 7s. 6d. to £44. 12s. 9d. three months. Tin, steady: Straits closed at £67. to £67. 10s. cash, and £67. 7s. 6d. to £67. 17s. 6d. three months; Australian, £67. 15s.; English ingots, £71. Lead, firm: Spanish, £10. 5s.; English, £10. 7s. 6d. Silesian spelter: ordinary, £15. Nickel, 1s. 2½d. Antimony, £32. 5s. Quicksilver: first hands, £7. 5s.; second hands, £7. 4s. Copper shares, firm: Cape, 2½ to 2¾; Copiapo, 2¼ to 2½; Libiola, 3¾ to 3¾; Mason and Barry, 2¼ to 3; Rio Tinto, 16¼ to 16½; Tharsis, 4¾ to 5¾.

GLASGOW, WEDNESDAY.—Market flat, with fair business. Scotch done at 43s. 11¼d. and 43s. 9½d. cash, also at 44s. 0½d. one month, closing with buyers at 43s. 9d. cash, sellers ask 43s. 10d. Cleveland closes with buyers at 35s. 6d. cash, sellers ask 35s. 6½d. Cumberland hematite done at 44s. 6d. one month; closing with buyers at 44s. 3½d. cash, sellers ask 44s. 4½d. Middlesbrough hematite closes with buyers at 42s. 6d. cash, sellers ask 42s. 7½d.

REPORT ON MANURE MATERIAL.

There is not much of interest to comment upon, spot market being very quiet, and buyers in the main holding back in regard to further purchases ahead. Prices would seem to have reached a safe point, but

the season about closing does not afford much encouragement to purchasing of material for next season. Sellers of 75/80% Fluorapatite phosphate rock are firm at their quotation of 7¼d. per unit, freight, and insurance, to good U.K. ports, for forward shipments, buyers do not respond at the price. The lower grades of rock from Carolina, Algerian, and Peace Rivers—continue to be freely offered but without much business resulting. The value of cargoes of the Plate bones afloat is about £4. 2s. per ton, but for shipment the idea is £4. 5s. per ton. There is the now usual difficulty of getting vessels of moderate size in the River Plate for bones, and it is unlikely that even £4. 1s. may have to be paid for cargoes of this size. Crushed Kurrachee bones for summer-autumn shipment offer £4. 5s. per ton ex quay Liverpool, but without finding buyers. Bombay bone meal, it is reported, has been sold for shipment, on c.i. terms, equal to £4. 5s. full delivered terms, and £4. 3s. 9d. delivered terms has been refused. On spot the market is quiet, with sellers at £4. 10s. per ton, ex quay. Nitrate of soda, in the absence of further arrivals, is a shade firmer on spot, and 8s. 1½d. to 8s. 3d. according to quality, now required. The forward position is a firmer, and advanced prices have been paid for summer-autumn shipment.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY

OILS.—Business continues good here; all prices of oils appear to be in the ascendant, especially those being produced from seeds arriving from countries having a coinage of a silver basis. The imports to Hull have been, up to date of this year, compared during same time year ago:—Linseed, 200,532 qrs., against 175,341 qrs.; rapeseed 55,854 qrs., against 42,955 qrs.; cottonseed, 80,034 tons, against 103,129 tons; olive oil, 4,736 casks, against 9,449 casks; rape 4,238 casks, against 3,285 casks; oilcake, 5,917 tons, against 8,1 tons; tallow, 4,899 cwt., against 7,940 cwt.; turpentine, 4,1 barrels, against 4,352 barrels. Linseed oil has improved by 12s. 1 per ton, closing firm at 19s. 9d. naked, spot; at the same rate the are buyers for May-Aug., and 19s. 3d. for the last four months. Refined cotton oil also higher in price and firm thereat, closing with buyers at 17s.; May-Aug., 17s. 3d.; and Nov.-April, 17s. 6d.; and 17s. 6d., and ordinary barrels 27s. 6d. per ton extra. Export for week, 13,640 cwt. of refined cotton oil and 1,700 cwt. of linseed. Cod oils are extremely scarce and difficult to buy, many buyers being anxious now to cover their requirements to the end of the year, val ranging from £18. to £22. per ton. Castor oil from 2¼d. per lb. first pressure. Spirits of turpentine, 23s. per cwt. Liquid soap for wool dressing, £16. per ton. Wool cream for card purposes, £11. per ton.

CAKES.—Linseed cakes in limited request: 95% pure, £5 17s. 1 per ton; Russians, £5. 12s. 6d. Oil cakes, £5. 2s. 6d. Cotton cakes a quiet demand: best makes, £3. 15s.; seconds, £3. 10s. Rape cakes unaltered.

PAINTS.—Makers continue busy. Prices are: White and leads unchanged. Venetian red, dry, from £4. per ton; ground oil, £11. per ton. Yellow ochre, dry, from £3. 17s. 6d.; in oil, £11. per ton. Ultramarines from 3d. to 8d. per lb. Vermilion from 4d. to 1s. per lb. Paint remover, 25s. to 30s. per cwt. Imper black varnish, £5. 10s. per ton, in barrels. Oak varnish from 5s. 6d. per gallon.

TYNE CHEMICAL REPORT.

TUESDAY

Chemicals remain without alteration in price, though there is a somewhat better demand for shipment. Caustic soda, £9. 10s. per ton in high strength 76/77%; 70%, £7. 15s. per ton. Bleaching power, £7 to £7. 5s. per ton. Soda crystals, £1. 16s. 6d. per ton, gross weight locally.

Bleaching powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, nett; caustic soda, 76/77%, £9. 10s. per ton, nett; do., 70%, £7. 15s. per ton, nett; recovered sulphur, 2 cwt. bags, £4. per ton, nett; soda ash, 48%, £3. 12s. 6d. per ton, nett; do., 52%, £3. 17s. 6d. per ton, nett; do., 56%, £4. 10s. per ton, nett; alkali, 36%, £2. 15s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. 15s. per ton, nett; do., 52%, £5. 5s. per ton, nett; hyposulphate of soda, 5-7 cwt. casks, £6. per ton, nett; do., 1 cwt. kegs, £6. 12s. 6d. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £1. 16s. 6d. per ton gross weight; do., 2 cwt. bags, £1. 16s. 6d. per ton, nett; chlorate of potash, 5d. per lb., less 5%; pearl hardening £3. per ton, nett; pure white sulphate of alumina, £4. 2s. 6d. per ton, nett; blanc fixe, £7. 10s. per ton, nett; chloride of barium £7. 10s. per ton, nett; carbonate of alumina, £28. 15s. per ton.

uminate of soda, £33. 15s. per ton, nett; in 5 ton lots, £28. ton, nett.

South Durham salt is steady at 9s. to 9s. 6d. per ton, es.

S.—Trade here is rather better, with an improving demand in coal. Coke is also in better inquiry, the improvement in and steel trade having a beneficial effect. To-day's prices are: orthumbrian steam, 8s. 9d. to 9s. per ton; second qualities, 7s. 8s. per ton; small steam, 3s. 9d. to 4s. per ton; bunker 3d. to 7s. per ton; gas coals, to 6s. 9d. 7s. 6d. per ton; coke, 12s. 6d. to 13s. 6d. per ton.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

Turn for the better in sulphate of ammonia has not proved so far, and further way has been made on the up-grade of to-day £10. 7s. 6d. is on report as having been done for prompt, alers are also beginning to evince some anxiety on the score of ward supplies. Towards the close of the week one buyer paid s. for forward, and subsequently £10. 17s. 6d. was demanded rs, and got. Possibly there has been a further step upward new week came in. These forward transactions are long ne, at least, extending on to March, 1896.

General chemicals the most prominent feature, perhaps, is the advance of sulphate of copper. In the alkalies, enquiry ghtly with the season, and the reports speak of considerable ents of bleaching powder to the Russian Baltic ports, with- ever, affecting prices as yet.

Shale products section, the only change is that affecting oil, which is very idle since the late rise. Makers are con- the advisability of slightly reducing price again.

Prices current are:—Soda crystals, 35s. nett, Tyne; 48/52°, £3. 15s. to £4. 5s. nett, Tyne; white alkali, 4. 10s. to £5. 5s. nett, Tyne; alum in lump, £5. 10s. nett; caustic soda, white, 74° £9., 70/72° £7. 15s., 60/62° and cream 60/62° £6. 10s., all nett, Liverpool; bleaching £6. 5s. to £7., nett, Tyne; saltcake, 17s. 6d.; borax, English £20., and boracic acid, £30. nett, Glasgow; bicarbonate of wt. casks, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; ate of potash, 4½d. nett, for Scotch and English deliveries (for ¾d. nett, f.o.b. Glasgow); bichromate of soda, 3¾d. nett, for and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); of potash, 4¾d. less 5%, Liverpool; nitrate of soda, ; sulphate of ammonia, £10. 7s., 6d. prompt f.o.b. Leith; niac, first and second white, £39. and £37. nett, any port; of copper, £15. 15s., less 5%, Liverpool; paraffin scale, hard and soft, 1½d. to 2½d. per lb.; paraffin wax 120° semi-refined, 2¾d.; paraffin spirit (naphtha), 5d. to 6d. per gallon; oil (burning), No. 1, 7½d. and crystal 7¾d. at works, for buyers (English sales rd. lower); ditto (lubricating) 865° 885° £4. 10s. to £5., and 890/895° £5. to £5. 10s. Week's of sugar at Greenock were 38,516 bags beet unrefined.

New Companies.

ord Portland Cement Co., Ltd.—CAPITAL £20,000., in £1. each. This company has been formed to acquire the of the Portland Cement Co., Dartford, and to carry on the of cement, lime, and plaster of Paris manufacturers. The rs to the memorandum of association are:—W. W. Hewitt, Works, Dartford, cement manufacturer; C. Hewitt, Knock- lge, Greenhithe, retired; W. F. Gorham, Dunelm Lodge, he, engineer; Mrs. S. B. Hewitt, Greenhithe; Mrs. S. E. a, Dunelm, Greenhithe; H. B. Shrewsbury, Greenhithe, ; W. H. Chesworth, Fulwich-road, Dartford, clerk.

Disinfectant Co., Ltd.—CAPITAL £2,000., in shares of £5. each. This company has been formed to manufacture, sell, and deal in disinfectants, soaps, acids, etc.

The Imperial Marble Co., Ltd.—CAPITAL £120,000., in shares of £1. each. This company has been formed to acquire and carry on the business of artificial stone, lime, cement, marble, and plaster of Paris merchants and manufacturers. The subscribers to the memorandum of association are:—L. H. Isaacs, 3, Verulam Buildings, Gray's Inn, architect; C. J. Cox, Long Cross, Chertsey, gentleman; C. Barry, 1, Victoria-street, S.W., architect; C. M. Lyte, 7, Clyde-street, Redcliffe Gardens, S.W., director; C. M. Rae, 153, Maida Vale, W., director of company; L. C. Farebrother, 16, St. Helen's-place, E.C., secretary; A. P. Manton, 16, St. Helen's-place, E.C., merchant.

Vyne and Everett, Limited.—CAPITAL £20,000, in £10 shares. This company has been formed to acquire and carry on the business of seed and manure merchants, etc. The subscribers to the memorandum of association are:—F. Everett, Swaffham, Norfolk, merchant; W. R. Everett, The Chase, King's Lynn, merchant; G. A. Coller, 94, Newmarket-road, Norwich, merchant; C. T. Celler, Hartwood, Eaton, Norwich, merchant; Mrs. F. Everett, Swaffham, Norfolk; Mrs. T. Moore, 18, Wellington-road, Great Yarmouth; Miss E. T. G. Lindsay, Swaffham, Norfolk.

The Patent List.

This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

Production of Chemical Compounds containing Sulphur. H. E. Newton. 8,425. April 29.
Improvements in Soap Draining Trays. W. Robinson. 8,435. April 29.
Manufacture of Solutions of Zinc and other Metallic Chlorides. C. Hoepfner. 8,449. April 29.
Manure Distributor. T. S. Sargeant. 8,473. April 30.
Separating Dust from Air. J. E. Mathewson. 8,490. April 30.
Improvements in Steamtraps. E. Yates. 8,510. April 30.
Treating Resin for Cleansing Purposes. K. T. Sutherland and G. Esdaile. 8,516. April 30.
Treating Refractory Sulphide Ores of Zinc, Lead, and Silver, and other Metals in Chemical Combination. J. B. Rudkin. 8,531. April 30.
Recovering Gold and Silver from Solutions. E. D. Kendall. 8,536. April 30.
Improvements in Enamel Paints. A. J. Boulton. 8,541. April 30.
Smoke-Consuming Appliance. W. McGlashan. 8,604. May 1.
Evaporating and Drying Apparatus. W. A. E. Crombie. 8,640. May 1.
Improvements in Manufacture of Cyanides. H. W. Crowther. E. C. Kossiter and G. S. Albright. 8,669. May 1.
Utilising Furnace Spent Gases. G. H. Hirst, J. Hirst, A. Hirst, and A. Beaumont. 8,680. May 2.
Manufacture of Hyperoxide of Alkali and Alkaline Earths. P. Jensen. 8,742. May 2.
Improvements in Material for Removing Grease and Oil from Fabrics. R. Gartenmeister, O. Stommel, and F. Vorberg. 8,798. May 3.
Making Tormentil Soap by the Cold Process. W. P. Thompson. 8,814. May 3.
Sewage Disinfecting Apparatus. P. O'Dowd. 8,877. May 4.
Manufacture of Varnish. H. F. Cumming. 8,915. May 4.
Preparation of Lead Chloride for Electrical Storage Batteries. A. R. Davies. 8,914. May 4.

Gazette Notices.

PARTNERSHIPS DISSOLVED.

J. ANDERSON, T. ROWLEY, and R. D. KAY, indiarubber manufacturers, Clayton near Manchester, under the style of the Manchester Novelty Manufacturing Company.
B. BROOKS and H. E. CAUSER, chemical agents, and beer finings merchants, &c., under the style of B. Brooks and Co.

IMPORTS OF CHEMICAL PRODUCTS

AT

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending May 4th.

Acid—5 pkgs. Fr. Boehm
100 pkgs. Beresford & Co.
119 A. & M. Zimmermann

Acetone—

Holland, 4 drs. T. H. Lee
3 pkgs. G. Rahn & Co.
Germany, 20 Ryley & Co.
" 2 H. Lorenz
" 10 T. Palmer

Alum—

Germany, 100 pkgs. Beresford & Co.

Ammonium Sulphate—

France, 75 t. F. S. Battle

Anthracene—

Holland, 243 cks. Burt, Boulton & Co.

Antimony Ore—

Germany, 13 t. Major & Field

Arsenic—

Germany, 13 pkgs. B. & F. Wf. Co.

Asbestos—

Holland, £10 Robinson, Roberts & Co.

Barytes—

Germany, 23 Craven & Co.
Germany, 40 cks. Burrell & Co.
Holland, 36 Magee, Taylor & Co.

Bioxalate — Holland, 10 pkgs. Bleaching Powder — Belgium, 68 pkgs.	Barnesford & Co. H. Wallace & Co.	" 5 " 42 " 22	Elkan & Co. Croydale & Co. Arbuthnot, Latham & Co.	Paraffin Wax — U. States, 300 brls	C. Hickman & Co. Anglo-Am. Oil Co.	Ultramarine — Holland, 2 cks. Belgium, 20 cks. Germany, 12 pkgs.	W. H. Carey & Co. H. Kohn Societ
Gamphor — Germany, 103 pkgs.	H. A. Litchfield & Co. S. Viggis & Co. R. Warner & Co.	" 9 " 2 " 38	F. Huth & Co. P. & O. Co. Cotesworth & Powell	Phosphate of Lime — France, 210 t	Lawes Manure Co., Ltd. Anglo-Contl. G. Wks. H & E. Albert Hammond & Co.	" 11 " 29 " 1	Magen, Taylor, Hornu, Peron, S. G. Raba
Hong Kong, 99 " 99 20 cts.	Merry & Sons City Coml. Wf.	" 171	Page, Son & Co. R. Von Glehn & Sons L. & I. D. Jt. Co.	Phosphate Rock — Belgium, 90 t	H. & E. Albe t Odams Chemical Manure Co.	Germany, 13 pkgs. U. States, 33 " 14 France, 4	L. & I. D. Allan B. & Beck & P Flagniol
Caoutchouc — Germany, 15 c.	Anderson, Weber & Smith Wallace Res. Forbes, Forbes & Co.	" 18 " 78	Logwood B. Honduras, 200 t.	Belize Est. Produce Co.	" 200	Vermilion — Hong Kong, 10 cts.	L. & I. D.
" 18 " 78	L. & I. D. Jt. Co. Prop. Bull Wf. Price, Hickman & Co.	" 45 " 77	Myrabolams E. Indies, 2,040 pkgs. " 3,074 " 820	" 1 " 2 " 1	U. States, 2,128 France, 75	White Lead — France, 42 cks.	W. Harv
C. America, 95 " 77	L. & I. D. Jt. Co. L. & I. D. Jt. Co. L. & I. D. Jt. Co. Prop. Bull Wf. H. Johnson & Sons Lewis & Peat Arbuthnot, Ewart & Co.	" 74 " 40 " 16 " 50 " 85 " 6 " 39	Shumac Italy, 100 pkgs.	Hicks Nash & Co. L. & I. D. Jt. Co.	" 13 pkgs. " 150 cts. " 20 Ceylon, 78 brls.	Holland, 56 Germany, 113 Belgium, 20 brls. Germany, 10 cks. Holland, 23 Belgium, 6	M. Ashby Perkins & H Randall S. H. Wilms Lensch
Castor Oil — E. Indies, 105 cks. " 44	Ross & Deering Cayzer, Irvine & Co.	" 11 brls. " 20 " 42	Tanner's Bark Germany, 50 t.	Deering & Robottom Hicks Nash & Co. L. & I. D. Jt. Co.	Potassium Bioxalate — Holland, 20 pkgs. Germany, 104 c.	Wood Pulp — Sweden, 200 bls.	Henderson, C
France, 11 brls. " 20 " 42	Barnesford & Co. Anderson, Weber & Smith Lucas & Spencer's Wf., Ltd.	" 47 " 51	Termeric E. Indies, 127 pkgs. Hong Kong, 100 Valonia A. Turkey, 134 t.	" 1 " 2 " 1	" 150 cts. " 20 " 78 brls.	Norway, 52 Holland, 50 " 2,600 Norway, 782 Belgium, 1,447 pkgs. Norway, 1,700 Sweden, 765 Germany, 203 bls.	E. J. & W. Gold W. G. Taylor F. Claydon & W. E. Burt C. Ash
Caustic Potash — Belgium, 50 c.	Petri Bx.	" 100 " 500 " 25	Farina — Holland, 50 pkgs.	Dunlop Bx H. Lorenz	Potassium Carbonate — Germany, 104 c. " 100 " 389 France, 40	Zinc Oxide — Germany, 50 cks. Holland, 50 brls. " 200 cks. Germany, 215	Barnesford & M. Ashby Society & J. M.
Chemicals (otherwise undeciphered) Germany, 48 pks. " 5 " 3 " 34 pkgs. Holland, 3 U. States, 50	T. H. Lee Craven & Co. A. & M. Zimmermann A. Hughes J. Barber & Co. Anderson, Weber & Smith	" 100 " 500 " 25	French Chalk — Austria, 220 Italy, 47	Typke & King W. Harrison & Co.	Potassium Nitrate — France, 4 pkgs. Germany, 12 pkgs. Italy, 2 t.	Liverpool Week ending May 31st.	
Germany, 139 " 34 pkgs. Holland, 3 U. States, 50	L. & I. D. Jt. Co. W. J. Cook T. Palmer	" 100 " 500 " 25	Glucose — U. States, 100 pkgs.	T. C. Duche & Sons Beck & Pollitzer Baxter & Hoare Deering & Robottom Prop. Sun. Wf. G. Hedges & Son L. Suro & Co.	Pumice Stone — Germany, 12 pkgs. Italy, 2 t.	Acetate of Lime — New York, 355 lbs.	Man Ship Canal
Germany, 4 pkgs. Belgium, 5 " 4	C. Atkins & Nisbet Howards & Sons F. C. Devon & Co. Kirkpatrick & Co. E. & F. Wf. Co. G. Ward & Sons	" 100 " 500 " 25	Infusorial Earth — Holland, 220	T. H. Lee	Pyrites — Spain, 1,053 c.	Ammonia — Catania, 2 cks.	
Cream of Tartar — France, 6 pkgs.	C. Atkins & Nisbet Howards & Sons F. C. Devon & Co. Kirkpatrick & Co. E. & F. Wf. Co. G. Ward & Sons	" 100 " 500 " 25	Lead Acetate — Germany, 17 pkgs. Holland, 6	F. Boehm B. & F. Wf. Co. Barnesford & Co.	Quicksilver — Italy, 100 brls.	Arachide Oil — Marseilles, 25 brls.	J. J. Lan
Dextrine — Germany, 10 pkgs. " 50 " 50	H. Lorenz Beck & Pollitzer M. D. Co.	" 100 " 500 " 25	Manganese Ore — Adelaide, 475	G. S. Yuill & Co.	Rosin — Germany, 5 brls.	Barytes — Antwerp, 50 lbs. Bremen, 50	18 cks 11
Dyestuffs — Annatto E. Indies, 3 pkgs. Argols Italy, 20 pkgs. Catch E. Indies, 400 pkgs. Dirt Dirts E. Indies, 13 pkgs. Extracts Denmark, 41 pkgs.	J. P. Alpe & Co. Thames S. T. & L. Co., Ltd. J. Swire & Sons Lewis & Peat Bailey & Leatham Sorensen & Co. Tegner, Price & Co. T. H. Lee Deering & Robottom Carey & Sons Belize Est. Produce Co.	" 100 " 500 " 25	Manure — Germany, 21 t. France, 120 " 262 Germany, 150 " 150 " 70 Melbourne, 13 Austria, 2,800 Germany, 70 Queensland, 11 Belgium, 15	T. H. Lee D. de Pass & Co. Anglo-Continental Guano Works Lawes Manure Co., Ltd. J. Gibbs & Co. F. W. Berk & Co., Ltd. Low, Sons & Bedford W. Montgomery & Co. Anglo-Cont. Guano Wks. Austrian Meat Co. F. J. Battle	Saltpetre — Germany, 1,000 bgs.	Bone Ash — River Plate, 127 lbs. Zarate, 640	H. B. J. Nelson & Co.
Sulphur Ore — Belgium, 46 cts.	A. B. Curtis & Co.	" 100 " 100 " 100	Methyl Alcohol — Germany, 18 dms.	Stein Bx.	Silica — Germany, 15		

200 cks.	Co-op. W'sale Society, Ltd.
1,355 ps.	D. Midgley & Sons
5,801	W. H. Thompson & Co.
667 bgs.	D. Sassoon & Co.
650 bgs.	75 bls.
150	
650 bgs.	H. Tyrer & Co.
5 cs.	
200 brls.	
350	
22 cks.	
20 bgs.	
75	100 bls.
38	Co-op. W'sale Society, Ltd.
860 t.	Peruvian Corporation
2 cs.	
4 cks.	
700 t.	
397 bgs.	
1,200 brls.	H. Parkinson & Co.
20 551 bgs.	J. R. Haws & Co.
96 brls.	
89 cks.	Co-op. W'sale Society, Ltd.
15 cks.	
200 brls.	
100 brls.	
1,260 t.	
20 cks.	
55 dms.	
30 brls.	
56 bgs.	
7,976 t.	Matheson & Co.
4 cks.	
900 bxs.	1 cs.
275	
250	Brown, Brs. & Co.
2	W. Hoggitt
200 bgs.	
1 brl.	T. Lowden
5 cs.	
100	J. T. Fletcher & Co.
180	
89	
37 bgs.	
26 bls.	
430 bgs.	92 brls.
343 cks.	
299 cks.	294 cs.
220 pps.	J. Nelson & Son, Ltd.
5 cks.	
6 cks.	
2 cks.	
2	

Treacle—	
Philadelphia,	50 brls.
Bordeaux,	3 cs.
Boston,	1 kg.
Ultramarine—	
Rotterdam,	4 cks.
Yarnish—	
Antwerp,	4 cks.
	13 cks. 1 cs.
Waste Salt—	
Hamburg,	515 cks.
	305 bgs.
White Lead—	
Rotterdam,	38 cks.
Wood Pulp—	
Drontheim,	1,840 bls.
Skien,	5,260
Portland M.,	420
Rotterdam,	104
Zinc Ashes—	
Marseilles,	12 brls.
Zinc Oxide—	
Antwerp,	30 brls.
Zinc White—	
Rotterdam,	85 cks.

MANCHESTER.

Week ending May 4th.

Acetic Acid—	
Rotterdam,	2 cks.
Antwerp,	20 blns.
Albumen—	
Antwerp,	4 cs.
Ammonium Acetate—	
Rotterdam,	3 brls.
Barium Chloride—	
Rotterdam,	8 cks.
Bone Ash—	
Rio Grande,	395 t.
do Sul,	qty.
Castor Oil—	
Antwerp,	84 brls.
Chromium Acetate—	
Rotterdam,	10 cks.
Colours—	
Antwerp,	10 cks.
Rotterdam,	110 62 cs.
Cottonseed Oil—	
Rotterdam,	200 tcs.
Dyestuffs—	
Alizarine	
Rotterdam,	33 cks.
Fustic	
Hamburg,	509 bgs.
Logwood	
Laguna,	393 t.
Farina—	
Hamburg,	1,030 bgs.
Stettin,	1,640
	600
Rotterdam,	500
Glucose—	
Hamburg,	90 cks.
Glue—	
Rouen,	14 cks. 12 bls.
Hamburg,	4
Rotterdam,	200 bgs.
Antwerp,	5 cks. 20
Stettin,	9
Litharge—	
Rotterdam,	44 cks.
Ochre—	
Rotterdam,	1 ck.
Ozokerit—	
Stettin,	80 blcks.
Pitch—	
Rotterdam,	24 cks.
Potash—	
Hamburg,	35 cks.
Pyrites—	
Huelva,	1,774 t.
Rosin—	
Wilmington,	2,650 brls.
	4,791
Starch—	
Rotterdam,	140 cs.
Antwerp,	340
Stearine—	
Antwerp,	7 bgs.

Sulphuric Acid—	
Rotterdam,	10 cks.
Tallow—	
Hamburg,	185 cks.
Tar Waste—	
Rotterdam,	8 cks.
Tartaric Acid—	
Rotterdam,	21 cks.
Yarnish—	
Antwerp,	1 ck.
Waste Salt—	
Hamburg,	qty.
White Lead—	
Rotterdam,	3 cks.
Wood Pulp—	
Sannesund,	4,288 bls.
Gothenburg,	1,675
Halmstadt,	1,362
Drammen,	254 bds.
	100
	160
Christiana,	340
Zinc Oxide—	
Rotterdam,	30 brls.

HULL.

Week ending May 4th.

Acetate—	
New York,	1,595 bgs.
Acetic Acid—	
Rotterdam,	10 blns.
Aniline—	
Amsterdam,	3 kgs.
Arsenic—	
Hamburg,	125 cs. 10 brls.
Asbestos—	
Reval,	226 bgs.
Barytes—	
Rotterdam,	48 cks.
Bremen,	40
Antwerp,	75
Rotterdam,	46
Bone Meal—	
Bombay,	500 bgs.
Chemicals (otherwise undescribed)	
Hamburg,	2 cs.
Stettin,	15 cks.
Bremen,	9 pks.
Antwerp,	66
Hamburg,	2 cs.
Danzig,	16 pks.
Dunkirk,	100 dms.
Colours—	
Rotterdam,	21 pks.
Hamburg,	2 cks. 6 cs.
Antwerp,	1
	39 pks. 30 brls.
Hamburg,	2 cks.
Rotterdam,	30
Cottonseed Oil—	
New York,	680 brls.
Cryolite—	
Copenhagen,	8 cks.
Dextrine—	
Stettin,	100 bgs.
Dyestuffs—	
Alizarine	
Rotterdam,	50 cks. 74 pks.
	15 pks.
Madder	
Rotterdam,	8 cks.
Myrabolams	
Bombay,	15,717 bgs.
Valonia	
Smyrna,	159 t.

Dyestuffs (otherwise undescribed)	
Hamburg,	48 pks.
Farina—	
Stettin,	400 bgs.
Harlingen,	940
Ghent,	160 cs.
Hamburg,	50 bgs.
Glucose—	
Stettin,	20 cks.
	400 bgs.
Glue—	
Stettin,	40 bgs.
Rouen,	31
Rotterdam,	6
	4 cs.
Antwerp,	8 cks.
Hamburg,	50 bgs.
Guano—	
Chincha Is.,	1,321 t.
Kelp—	
Harlingen,	40 pks.
Ochre—	
New York,	68 brls.
Paint—	
New York,	10 cs.
Gothenburg,	20 dms.
Permanganate—	
Rotterdam,	4 cks.
Phosphate—	
Ghent,	1,020 bgs.
Pitch—	
Rotterdam,	3 cks.
Plumbago—	
Hamburg,	9 cks.
Potash—	
Rotterdam,	6 cks.
Hamburg,	10
	10
Dunkirk,	69 dms.
	1 ck.
Saltpetre—	
Antwerp,	135 bgs.
Hamburg,	30 kgs.
Starch—	
Amsterdam,	15 cs.
Bremen,	3,309
Antwerp,	235
	200
Stearine—	
Christiansund,	13 brls.
Antwerp,	12 cks.
	93 bgs.
Tartaric Acid—	
Rotterdam,	6 cks.
Treacle—	
New York,	875 brls.
Turpentine—	
Libau,	51 brls.
Ultramarine—	
Rotterdam,	9 cks.
Bremen,	8
Rotterdam,	14
Yarnish—	
Hamburg,	2 cs.
Waste Salt—	
Hamburg,	504 bgs.
	504

White Lead —		
Rotterdam,	51 cks.	W. & C. L. Ringrose
"	63	Hutchinson & Son
Wood Pulp —		
Hango,	51 bls.	J. Good & Sons
"	10	Furley & Co.
"	88	
Zinc Oxide —		
Hamburg,	5 cks.	Bailey & Leatham
Zinc White —		
Amsterdam,	56 cks.	W. & C. L. Ringrose

GLASGOW.

Week ending May 9th.

Acetate of Lime —		
New York,	761 bgs.	
Acetone —		
Hamburg,	5 cks.	
Alkali —		
Rotterdam,	16 cks.	J. Rankine & Son
Alum —		
Hamburg,	165 cks.	
Aniline —		
Rotterdam,	8 cks. 1 cs. 10 bxs. 16 bls.	J. Rankine & Son
Arachide Oil —		
Rotterdam,	1 ck.	J. Rankine & Son
Barium Chloride —		
Rotterdam,	8 cks.	J. Rankine & Son
Barium Sulphate —		
Antwerp,	100 bgs.	
Barytes —		
Rotterdam,	42 cks. 1 bg.	J. Rankine & Son
"	69 pkgs.	
Bone Meal —		
Dyrefjord,	374 sks.	
Castor Oil —		
Marseilles,	113 bls.	
Antwerp,	57 cks.	
Cellulose —		
Hamburg,	100 bls.	
Colours —		
Rotterdam,	5 cs.	J. Rankine & Son
Antwerp,	11 cks.	
Hamburg,	2	
Rotterdam,	27 pkgs.	
Cottonseed Oil —		
New York,	600 bls.	
Cream of Tartar —		
Marseilles,	5 cks.	
Dyestuffs —		
Alizarine		
Rotterdam,	58 cks.	J. Rankine & Son
"	68 pkgs.	
Argols		
Bordeaux,	104 cks. 31 bgs.	
Extracts		
Rouen,	40 cks.	

Myrabolams		
Bombay,	620 bgs.	
Sumac		
Palermo,	100 bls. 350 bgs.	
New York,	70	
Farina —		
Hamburg,	600 bgs.	
Delfsyzhl,	560	
Gelatine —		
Hamburg,	3 cs.	
Glucose —		
New York,	350 bls.	
Glue —		
Hamburg,	8 cks.	J. Rankine & Son
Rotterdam,	40 bgs.	
Boston,	7 bls.	
Rouen,	50 cks. 6 bls. 1 pkge.	
New York,	134 bls.	
Guano —		
Huanillos,	1,000 t.	A. Cross & Sons
Dyrefjord ,	477 sks.	
Lead Acetate —		
Rotterdam,	15 cks.	J. Rankine & Son
Linseed Oil —		
Baltimore,	500 bls. 360 sks.	
Mercury —		
Rotterdam,	1 cs.	J. Rankine & Son
Ochre —		
Marseilles,	86 bls.	
Rouen,	29 cks.	
Oxalic Acid —		
Rotterdam,	6 cks.	J. Rankine & Son
Palet —		
New York,	3 bls.	
Phosphates —		
Marseilles,	137 cs.	
Antwerp,	500 bgs. 10 cks.	
Potash —		
Hamburg,	60 cks.	
Rosin —		
New York,	500 bls.	
Saltpetre —		
Hamburg,	4 cks. 10 kgs.	
Soap —		
Newport News,	340 bls.	Wm. Buntin & Co.
"	240	W. T. Geddes
Boston,	4 cs.	
Rotterdam,	7 cs.	J. Rankine & Son
Sodium Acetate —		
Rouen,	8 cks.	
Stearine —		
Amsterdam,	62 bgs.	
Sulphur —		
Catania,	625 bgs. 60 bls.	
Tallow —		
New York,	25 tcs.	
Tartar —		
Bordeaux,	20 cks.	
Tin Oxide —		
Rotterdam,	5 cks.	J. Rankine & Son

Treacle —		
Philadelphia,	1,400 bls.	
Yarnish —		
New York,	4 bls. 2 bxs.	
Waste Salt —		
Hamburg,	1,204 bgs. 142 t. 386 cks.	
White Lead —		
Rotterdam,	117 cks.	J. Rankine & Son
Whiting —		
Dieppe,	186 cks.	
Wood Pulp —		
Hamburg,	407 bls.	
Christiania,	785	
Drontheim,	1,680	
Zinc Ashes —		
Antwerp,	1 ck.	
Zinc Oxide —		
Rotterdam,	25 cks.	J. Rankine & Son
Antwerp,	25	

TYNE.

Week ending May 4th.

Alum Earth —		
Hamburg,	36 cks.	Tyne S. S. Co.
Barium Chlorate —		
Rotterdam,	300 bgs.	Tyne S. S. Co.
Cod Oil —		
Bergen,	5 bls.	
Trondhjem,	5	
Colours —		
Rotterdam,	1 bl.	Tyne S. S. Co.
Farina —		
Hamburg,	20 bgs.	Tyne S. S. Co.
Glue —		
Antwerp,	1 ck.	Tyne S. S. Co.
Pyrites —		
Huelva,	2,923 t.	Scott Bros.
Starch —		
Rotterdam,	100 cs.	Tyne S. S. Co.
Tartaric Acid —		
Rotterdam,	3 cks.	Tyne S. S. Co.
White Lead —		
Antwerp,	11 cks.	Tyne S. S. Co.
Wood Pulp —		
Christiania,	256 bls.	
Laurvig,	180	
Zinc Oxide —		
Rotterdam,	25 cks.	Tyne S. S. Co.
Antwerp,	15 bls.	"

GOOLE.

Week ending May 1st.

Acetic Acid —		
Rotterdam,	2 cs.	
Alkali —		
Hamburg,	10 cks.	
Calais,	1	
Antimony —		
Boulogne,	5 cks.	

Barytes —		
Hamburg,	11 cks.	
Colours —		
Hamburg,	46 cks. 10 cs.	
Dyestuffs —		
Alizarine		
Rotterdam,	68 bls.	
Extracts		
Rouen,	6 cks.	
Fustic		
Hamburg,	7,845 lbs.	
Logwood		
Jamaica,	776 t.	
Belize,	675	
Madder		
Rotterdam,	1 ck.	
Dyestuffs (otherwise undisturbed)		
Rotterdam,	150 cks. 18 cs.	
Boulogne,	24	14 pkgs.
Farina —		
Hamburg,	535 bgs.	
Delfsyzhl,	208	
Glucose —		
Hamburg,	60 cks.	
Glue —		
Rotterdam,	4 cks.	
Potash —		
Rotterdam,	20 cks.	
Calais,	37 dms.	
Pyrites —		
Huelva,	1,049 t.	
Saltpetre —		
Hamburg,	4 cks.	
Rotterdam,	85 bgs.	
Antwerp,	147	
Soda —		
Rotterdam,	20 cks.	
Yarnish —		
Boulogne,	1 cs.	
Waste Salt —		
Hamburg,	1,135 cks. 508 bgs. 40	
Zinc Oxide —		
Antwerp,	20 bls.	

GRIMSBY.

Week ending May 4th.

Chemicals (otherwise undisturbed)		
Hamburg,	7 cs. 6 pkgs.	
Rotterdam,	20 bgs.	
Antwerp,	40	
Colours —		
Hamburg,	6 cs. 27 cks. 30 pkgs.	
Antwerp,	10	11
Farina —		
Hamburg,	350 bgs.	
Plumbago —		
Hamburg,	5 cks.	
Starch —		
Antwerp,	60 cs.	
Waste Salt —		
Hamburg,	500 bgs.	
Wood Pulp		
Ronneby,	1,789 bls.	
Gothenburg,	254	
Zinc Ashes —		
Antwerp,	17 cks.	

EXPORTS OF CHEMICAL PRODUCTS

OF

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.**LONDON.**

Week ending May 8th.

Acids —		
Hankow,	12 cs.	£40
Delagoa Bay,	11 t. 1 c.	145
Alkali —		
Algoa Bay,	6 t. 3 c.	£17
Alum Cake —		
Calcutta,	18 t. 6 c.	£66
Ammonium Carbonate —		
Melbourne,	20 cs.	£37
New York,	6 t. 9 c.	210
Ammonium Chloride —		
Adelaide,	1 t. 4 c.	£30
Hamburg,	2 cks.	17
Yarna	12	21

Ammonium Sulphate —		
St. Vincent,	30 t.	£320
Amsterdam,	100	1,000
Cullera,	25	265
Trinidad,	4	50
St. Lucia,	51	509
Amorphous Phosphorus —		
Algoa Bay,	5 cs.	£72
Anhydrous Ammonia —		
Sydney,	50 clydrs.	£274
Cape Town,	2 pkgs.	14
Bleaching Powder —		
Boston,	71 t. 8 c.	£650
Borax —		
Brisbane,	10 c.	£11
Carbon Bisulphide —		
Boston,	12 t.	£120
Carbonic Acid Gas —		
Algoa Bay,	10 cs.	£30

Caustic Potash —		
Napier,	1 t. 2 c.	£36
Caustic Soda —		
Delagoa Bay,	5 c.	£9
Nelson,	11	26
Hong Kong,	6	5
Algoa Bay,	1 t. 3	33
Napier,	2	5
Chemicals (otherwise unmet.) —		
Madras,	15 kgs.	£23
Mauritius,	5	25
Adelaide,	5	16
Melbourne,	5 t.	260
Copenhagen,	19 c.	41
Citric Acid —		
Boston,	25 kgs.	£153
Hugo,	5 c.	30
Philadelphia,	15	96
New York,	25	150
Adelaide,	3	19

Melbourne,	2 t.	
Copenhagen,	2	15
Konigsberg,	2	12
Genoa,	2	12
Hamburg,	1	
Rotterdam,	3 cks.	
Lisbon,	10	
Coal Products —		
Alizarine		
New York,	25 cks.	
Hugo,	18 kgs.	
Aniline Dyes		
Melbourne,	1 cs.	
Aniline Oil		
Dunkirk,	40 dms.	
New York,	20 dms.	
Anthracene		
Medingen,	248 cks.	
Hamburg,	5	
Benzol		
Boulogne,	47 cks.	

arg.	75	164
lam.	15	96
olic Acid		
arg.	40 cks	£249
lam.	95 40 dms	610
thha		
ne,	3 cks.	£18
reans,	16 cks.	£23
e,	108	132
mn Wax		
or,	5 cs.	£15
h,	20	32
ri News,	41 cks	£21
r,	185 t.	12
Kong,	500 cks.	394
dria,	200 brls.	296
ork,	500 500 bgs.	76
	582	400
		118
ta,	77 brls.	£89
r,	10 cks.	10
v,	227	60
Oil		
iburg,	25 runs.	£21
Bay,	10 t. 7 c.	36
roducts (otherwise undes.)		
elphia,	100 brls.	£38
r Sulphate—		
lin,	1 t.	£16
m,	12 5 c.	174
illes,	100	1,600
rt,	17	260
of Tartar—		
rt,	5 c.	£19
urne,	1 t.	66
ry,	2 10	167
ectants—		
Kong,	4 kgs.	£20
ry,	17 cs.	39
Bay,	3 pkgs.	14
urne,	14	35
ita,	2 t. 10 c.	24
tchurch,	15 pkgs.	25
burg,	25 cks.	125
rrara,	15	29
esia—		
din,	6 c.	£15
church,	5 cs.	10
re—		
aux,	20 t.	£180
juique,	112 5 c.	825
lits,	12 10	120
h,	7	70
adoes,	50	500
n,	80	940
seilles,	2	58
ra,	605 8	4,595
laie,	49 1	390
urier,	63	290
c Acid—		
ry,	30 carboys	£40
phate—		
ucia,	25 t.	£60
phoric Acid		
il,	1 t. 1 c.	£33
th—		
ington,	10 c.	£25
ort,	12 cks.	100
ourne,	10	25
th Crystals—		
York,	3 cs.	£17
th Salts—		
goa Bay,	27 t.	£4,266
sium Bicarbonate—		
adelphia,	2 t. 4 c.	£57
phama,	10	34
sium Chlorate—		
ryes,	1 t.	£42
sium Cyanide—		
a Bay,	3 t. 19 c.	£555
manton,	10 cs.	165
sium Prussiate—		
port News,	24 cks.	£401
etos—		
ort,	3 t. 8 c.	£120
etre—		
e Town,	1 t.	£22
cia,	1 7 c.	30
gier,	12 9	310
ia,	5 10	124
on,		
on.	2 t. 19 c.	£17
Alkali—		
bury,	1 t. 10 c.	£9
um—		
r York,	3 t.	£446

Sodium Arsenate—		
Algoa Bay,	15 t.	£375
Sodium Bicarbonate—		
Dunedin,	2 t.	£16
Nelson,	1	8
Sodium Hyposulphite—		
Boston,	9 t. 8 c.	£49
Sodium Nitrate—		
Lisbon,	15 t.	£140
Spent Oxide—		
Danzig,	177 t. 18 c.	£178
Sulphur—		
Natal,	1 t.	£8
Algoa Bay,	8 19 c.	104
Melbourne,		25
Cape Town,	18 1 30 cks	181
Sulphuric Acid—		
Cape Town,	30 kgs.	£20
Algoa Bay,	11 c.	11
Superphosphate—		
Valencia,	270 t.	£790
Castellon,	230	670
Reval,	10	44
Madras,	10	42
Tartaric Acid—		
Hiogo,	1 t. 10 c.	£142
Kurrachee,	1	103
Sydney,	2	194
Yokohama,	10	4

LIVERPOOL.

Week ending May 8th.

Albumen—		
Boston,	2 t.	£109
Alum—		
Sydney,	1 t. 10 c. 1 q.	£9
San Francisco,	10 q 3	47
Portland,	52 18	235
Bari,	1 16 3	8
Lisbon,	5 1	22
Galatz,	4 12 1	32
Havana,	5 7	20
E. London,	11 2	4
Ancona,	3	21
Melbourne Wf.,	1 10	10
Montreal,	35 2	208
Alexandria,	7 6 1	38
Aluminous Cake—		
Calcutta,	53 t. 1 c.	£167
Ammonium Carbonate—		
Leghorn,	1 t. 15 c	£26
Toronto,	1 t. 2 q.	34
Riga,	15	25
St. Petersburg,	11 12	377
Fairwater,	15 3	26
Ammonium Chloride—		
San Francisco,	4 t. 8 c. 2 q.	£131
Antwerp,	10 3	20
Smyrna,	1	38
Sto. kholm,	2 1	49
Vera Cruz,	3	6
Boston,	5 3	120
Ibrail,	12	22
Patras,	4 3	9
Alexandria,	1 10	56
Ammonium Sulphate—		
Barbadoes,	4 t. 4 c. 1 q.	£48
Gd. Canary,	2	20
Las Palmas,	42 10	451
Bordeaux,	5 8	54
Barcelona,	50 8	504
Genoa,	30 2 3	345
Valencia,	95 8 2	1,158
Bruges,	50 15 2	510
Arsenic—		
B. Ayres,	10 t. 25 cks.	£235
Bleaching Powder—		
Alexandria,	20 kgs. 30 brls	
Baltimore,	33 cks.	
Barcelona,	10	22 cs.
Bombay,		
Boston,	473	200
Calcutta,	10	
Fairwater,	2	
Ferrol,	45	
Genoa,	67	
Ghent,		
Havana,	6 15	
Naples,		
New York,	752 100	25 bxs.
Philadelphia,	163	
Rio de Janeiro,	7 4 cs.	
Rouen,	63	
San Sebastian,	28	
Boiler Composition—		
Bilbao,	3 cks.	
Boric Acid—		
Danzig,	2 t. 15 c.	£55

Sydney,	7 3 q 7	
Vera Cruz,	5 3 10	
Borate of Lime—		
Antwerp,	50 t.	£518
Borax—		
Sydney,	1 t.	£23
Genoa,	2 10 c.	46
Yokohama,	3 9 1 q	73
Hamilton, O.,	2 19 3	65
Quebec,	1 16	37
Antwerp,	5 5	105
Hamburg,	3 8 2	92
Vera Cruz,	5 2	6
Rotterdam,	8 4	164
Montreal,	9 1	6
Stockholm,	4 5 2	73
Venice,	10	10
Toronto,	1 14	31
St. John's,	4 3	10
Stettin,	9	180
Calcium Chloride—		
Boston,	26 t. 2 c.	£56
Carbolic Acid—		
Odessa,	1 t. 7 c. 2 q.	£44
Boston,	1 7 1	67
New York, 7 cks.	3 14	263
Kobe,	4 10	230
Rotterdam,	5 2	246
Hamburg,	5 6	274
Yokohama,	19 10 3	956
Castor Oil—		
Addah,	10 cs.	
Caustic Potash—		
Melbourne,	13 c.	£16
Chicago,	2 t. 1	30
New York,	1 5	35
Newport News,	3 11	91
Caustic Soda—		
Alexandria,	26 dms.	
Ancona,	64	
Baltimore,	328	
Barcelona,	424 10 cks.	
Bari,	35	
Bilbao,	60	
Bombay,	74	
Boston,	650	
B. Ayres,	6	
Calcutta,	343	
Cardenas,	20	
Fairwater,	102	
Genoa,	201	
Hamburg,	484	
Havana,	10	
Hiogo,	252	
Hong Kong,	20	
Kurrachee,	22	
Las Palmas,	6	
Marseilles,	26	
Matanzas,	50	
Melbourne,	63	20 bxs. 16 pkgs.
Montreal 12 kgs. 300		50
Naples,	44	
New York,	430	13 bxs.
N'port News, 1,079		100 brls. 55
Oporto,	30	
Palermo,	15	
Penang,	130	
Pernambuco,	5	
Philadelphia,	170	
Puerto Cabello,	10	
Quebec,	25	
Rangoon,	35	
Riga,	337	
Rio de Janeiro,	28	
Rotterdam,		27 cks.
Rouen,	54	
St. Petersburg, 877		
Samarang,	10	
San Francisco, 250		10 bxs
San Sebastian, 125		
Seville,	505	
Sourabaya,	45	
Stettin,	65	
Sydney,	37	
Tampico,	307	
Tarragona,	20	
Valencia,	40	
Valparaiso,	80	
Vera Cruz,	124	
Yokohama,	200	
Chemicals (otherwise unclassified)		
New York,	15 t. 10 c. 3 q.	£552
Bordeaux, 2 cs.		48
Beyrout,	1	37
Halifax,	4 2	8
Baltimore,	3	40
Bombay, 25 cks.		103
Rotterdam,	2 5	87
Hamilton,	1	35
Montreal,	1 4	42
Toronto,	1 5	44
London,	1 11	52
Marseilles,	6	10
Yokohama,	1 5	41

Odessa,	1 1	40
St. Petersburg,	6	709
Calcutta,	1 10	57
China Clay—		
Barcelona,	20 t.	
Bombay,	41	
Lisbon,	14 4 c.	
Maranham,	3 6	
Chloroform—		
Kurrachee,	1 cs.	
Valparaiso,	1	
Coal Products—		
Alizarine		
Sydney,	3 pkgs.	
Aniline Colours		
Barcelona,	2 cs. 1 kg.	
Bombay,	2	
Boston,	14	
Constantinople,	3	
Aniline Oil		
Barcelona,	2 dms. 5 cks	
Boston,	10	
Aniline Salts		
Barcelona,	10 cks.	
Bombay,	1	
Boston,	20 cs.	
New York,	15	
Santos,	10	
Mirbane Oil		
Montreal,	15 cs.	
Naphthaline Colours		
New York,	12 cks.	
Pitch		
Antwerp,	117 t.	
Cette,	688	
Genoa,	1,190	
Lagos,	10 brls.	
La Rochelle,	664 t 18 c.	
New York,	9 19	
Rouen,	2 cks.	
Tar		
Accra,	54 brls.	
Charlotte Town,	20	
Galatz,	30	
Ibrail,	10	
Pt. Natal,	550 dms.	
Tar Oil		
Nantes,	12 brls	
New York,	1 dmi	
St. John's, N'l.	10	
Tar Salts		
New York,	30 cks.	
Copperas—		
Alexandria,	7 t. 3 c.	£11
Copper Sulphate—		
Seville,	2 t. 3 c.	£33
Coquimbo,	1	1
Iquique,	1	1
Catania,	2 10	40
Lisbon,	231 9 3 q.	3,551
Valencia,	15 6	236
Tarragona,	56	866
Oporto,	61 16	957
Ibrail,	1	15
Galatz,	1 15	27
Dunkirk,	3 14 2	54
Bari,	1 3 3	18
Marseilles,	267 11	4,126
Rio de Janeiro,	11 3	10
Calcutta,	7 10	123
Cette,	406 11	6,290
Halifax,	1	13
Rouen,	24 10	303
Nantes,	39 12	594
Bordeaux,	497 13 2	6,924
Ancona,	51 19	781
Leghorn,	22 13	318
Tarragona,	70 3	1,067
Vigo,	10 5	153
Barcelona,	60 1	1,018
Messina,	2 10	38
Genoa,	30 3	462
Naples,	29 2	418
Cream of Tartar—		
Bordeaux,	1 ck.	£20
Disinfectants—		
New York,	2 t. 2 c.	£55
Yokohama,	1 13 2 q.	84
Calcutta,	2 10	14
Sydney,	1 18	13
Gelatine—		
Boston,	75 bxs.	
N. Orleans,	100	
San Francisco,	5 cks.	
Glucose—		
Malta,	50 bgs.	
Sydney,	4 cks.	
Glue—		
Barbadoes,	1 ck.	
Barcelona,	2	1 cs.
Colombo,		
Copenhagen,	40 t.	
Montreal,	20 bgs. 7	
Shanghai,		

Oil—	
Hamburg, 10 dms.	
Perp., 12	
Rotterdam, 1 ck.	
Salts—	
London, 20 cks.	
Burg, 20	
Oil—	
Rotterdam, 29 dms.	
Acid—	
Burg, 40 dms.	
Soda—	
London, 199 dms. 50 bgs.	
Alkalis (otherwise undescribed)	
London, 10 cks.	
Perp., 5	
Other Salts—	
Perp., 88 cks.	
Rotterdam, 22	
Oil—	
London, 6 brls.	
Perp., 7	
Rotterdam, 7 dms.	
Bicarbonate—	
London, 35 brls.	
Perp., 15 kgs.	
Rotterdam, 67	
London, 131 bgs.	
Oil—	
Burg, 2 dms.	
Rotterdam, 22	
Perp., 12 pos.	
Chloride—	
London, 5 cks.	

HULL.

Week ending May 4th.

Ammonium Sulphate—	
Rotterdam, 200 bgs.	
Oil—	
Burg, 48 cks.	
Shing Powder—	
Perp., 18 cks.	
London, 142	
Perp., 5	
London, 153	
Acid—	
Rotterdam, 18 cks.	
Soda—	
Perp., 69 dms.	
London, 40	
Perp., 45	
Alkalis (otherwise undescribed)	
Perp., 12 cs.	
Rotterdam, 10 cks. 24 pks.	
London, 2 365 lbs.	
Perp., 3 40 pks.	
London, 10	
Perp., 6	
London, 128 3	
Perp., 35	
London, 235 pks.	
Perp., 1	
London, 62 3	
Perp., 1	
London, 24	
Perp., 45 4 pks.	
London, 15	

Seed Oil—	
Perp., 398 c.	
London, 40	
Perp., 561	
London, 80	
Perp., 100	
London, 2,117	
Perp., 34	
London, 1,205	
Perp., 103	
Alkalis (otherwise undescribed)	
Perp., 1 cs.	
London, 7 cks.	
Perp., 20 25 dms.	
London, 10 kgs.	
Perp., 1 bg.	
London, 67 cks.	
Oil—	
London, 31 c.	
Perp., 21	
London, 660	
Perp., 43	
London, 59	

Drontheim, 17	
Hamburg, 20	
Rotterdam, 51	
Stavanger, 29	
Trieste, 191	
Manure—	
Dunkirk, 19 t.	
Painters' Colours—	
Antwerp, 54 cks. 8 dms.	
Amsterdam, 10 1 pkge.	
Bergen, 3	
Christiania, 70 108 pks.	
Copenhagen, 35 2 cs.	
Danzig, 11	
Dunkirk, 5 8	
Fiume, 7	
Ghent, 6	
Gothenburg, 10 1	
Hamburg, 52 48 1	
New York, 111	
Palermo, 1	
Reval, 4 1	
Rotterdam, 10 15 52	
Rouen, 18	
Stockholm, 177	
Stettin, 23	
Pitch—	
Antwerp, 136 t. 80 bgs.	
Copenhagen, 35	
Dunkirk, 200	
Gothenburg, 3 cks.	
Soap—	
Christiania, 2 cs.	
Hamburg, 2	
Stockholm, 1	
Starch—	
Copenhagen, 23 cs.	
Tallow—	
Gothenburg, 10 cks.	
Rotterdam, 77 43 tcs.	
Stockholm, 77	
Tar—	
Amsterdam, 16 cks.	
Copenhagen, 5	
Drontheim, 5	
Hango, 14	
Hamburg, 5	
Rouen, 10	
Ter a Alba—	
New York, 45 t.	
Treacle—	
Bergen, 125 cks.	
Varnish—	
Antwerp, 1 tin. 8 dms.	
Copenhagen, 3 cks.	
Ghent, 1 1 2 bxs	
Hamburg, 5 cs 15 cns.	
Rouen, 1	

GLASGOW.

Week ending May 9th.

Ammonium Sulphate—	
Hamburg, 50 t. 14 c.	
Carbolic Acid—	
Rotterdam, 4175	
Coal Products—	
Creosote Oil	
France, 415 t.	
Christiania, 415 t.	
Naphtha	
France, 5 t. 14 1/2 c.	
Paris, 4230	
Pitch	
Amsterdam, 204 t	
Hamburg, 31 16 c.	
Konigsberg, 43	
Canada, 4131	
Tar	
Bombay, 257 rnlts.	
Karachi, 4113	
Konigsberg, 335 brls.	
Canada, 90	
Tar Oil	
Konigsberg, 473	
Iodine—	
Rotterdam, 4255	
Iron Oxide—	
Germany, 196 t.	
Lead Acetate—	
Bombay, 8 t. 9 c.	
Linseed Oil—	
Montreal, 12 t. 7 1/2 c.	
Litharge—	
Bombay, 2 t. 8 1/2 c.	
Magnesium Sulphate—	
Christiania, 4 t. 10 c.	
Paint—	
Cape Town, 421	
Natal, 406	
Valparaiso, 406	

Pietermaritzburg, 26	
Painters' Colours—	
Antwerp, 438	
Bombay, 111	
Paraffin Wax—	
Rotterdam, 13 c.	
Paris, 4175	
Rouen, 1 t. 16 1/2	
Potassium Bichromate—	
Italy, 8 t.	
Rotterdam, 440	
Bombay, 3 10 1/2 c.	
Rouen, 15 11 1/2	
Potassium Prussiate—	
Lyons, 4343	
Rosin Oil—	
Rotterdam, 421	
Salt—	
Valparaiso, 4 t. 6 c.	
Sheep Dip—	
B. Ayres, 4250	
Soap—	
Bombay, 6 t. 11 c.	
Valparaiso, 2	
Sodium Bichromate—	
Italy, 18 t. 18 c.	
Antwerp, 24 7 1/2	
Bombay, 2 7	
Rouen, 20 4 1/2	
Sodium Sulphate—	
Canada, 11 t. 19 c.	
Sulphur c Acid—	
Karachi, 41,150	
Treacle—	
Christiania, 10 t. 5 c.	
Rotterdam, 2 19	
White Lead—	
Cape Town, 3 t. 10 c.	
Johannesburg, 8 15	

TYNE.

Week ending May 4th.

Alkali—	
Genoa, 21 t. 13 c.	
Antwerp, 4 19	
Rotterdam, 12 8	
Alum—	
New York, 2 c.	
Ammonium Chloride—	
Gothenburg, 1 t. 9 c.	
Ammonium Sulphate—	
Aalborg, 2 t. 10 c.	
Antimony—	
New York, 30 t.	
Barcelona, 1	
Arsenic—	
Genoa, 1 t. 3 c.	
Barcelona, 1 t. 16	
Barium—	
New York, 2 t.	
Barytes—	
Hamburg, 100 t.	
Blanc Fixe—	
Antwerp, 2 t. 1 c.	
Copenhagen, 4 6	
Bleaching Powder—	
Hamburg, 27 t. 17 c.	
Nakskov, 2 1	
Antwerp, 63 15	
Brake, 3 5	
Copenhagen, 42 15	
Rotterdam, 14 13	
Gothenburg, 31 3	
Christiania, 2 11	
Caustic Soda—	
Hamburg, 20 t. 1 c.	
Genoa, 11 17	
New York, 162 15	
Antwerp, 17 3	
Barcelona, 38 6	
Ancona, 6	
Rotterdam, 34 10	
Seville, 57 12	
Valencia, 12 7	
Gothenburg, 5 16	
Christiania, 4 18	
Fluorspar—	
New York, 103 t. 6 c.	
Hydrochloric Acid—	
Ergasteria, 1 c.	
Litharge—	
Gothenburg, 2 t. 15 c.	
Magnesia—	
Genoa, 3 c.	
Antwerp, 1	
Manure—	
Drontheim, 3 t. 7 c.	

Ochre—	
Drontheim, 1 t. 12 c.	
Oxalic Acid—	
Barcelona, 10 t. 3 c.	
Paint—	
Antwerp, 8 t. 10 c.	
Rotterdam, 10	
Phosphorus—	
Valencia, 2 t. 3 c.	
Barcelona, 8	
Salt—	
New York, 1,081 t.	
Slag—	
Rotterdam, 190 t.	
Soda—	
Hamburg, 6 t. 17 c.	
Genoa, 7 9	
Holbak, 27 10	
Ancona, 10 5	
Rotterdam, 14 19	
Drontheim, 5 5	
Stockholm, 41 11	
Seville, 2 2	
Gothenburg, 10 7	
Christiania, 5 3	
Soda Ash—	
Antwerp, 5 t. 6 c.	
Ancona, 5 2	
Bergen, 10 6	
Gothenburg, 111 11	
Sodium Silicate—	
Hamburg, 3 t. 2 c.	
Sodium Sulphate—	
Gothenburg, 50 t.	
Helsingfors, 550	
Sulphur—	
Antwerp, 10 t.	
Drontheim, 6 c.	
Gothenburg, 274	
Sannesund, 400	
Superphosphate—	
Drontheim, 9 t. 2 c.	
Tar—	
Vardo, 2 t. 14 c.	
White Lead—	
New York, 15 t.	
Copenhagen, 1 8 c.	
Ergasteria, 12	

GOOLE.

Week ending May 1st.

Benzol—	
Hamburg, 94 cks.	
Rotterdam, 46	
Chemicals (otherwise undescribed)	
Ostend, 1 ck.	
Rotterdam, 30 cs.	
Coal Products (otherwise under.)—	
Antwerp, 1 ck.	
Boulogne, 2 1 cs.	
Ghent, 12 2	
Hamburg, 13	
Dyestuffs (otherwise undescribed)	
Hamburg, 53 cks. 1 cs.	
Manure—	
Hamburg, 500 bgs.	
Ostend, 97	
Paint—	
Bruges, 5 cks.	
Pitch—	
Antwerp, 613 t.	
Soap—	
Antwerp, 4 cs.	

GRIMSBY.

Week ending May 4th.

Chemicals (otherwise undes.)—	
Dieppe, 2 cks.	
Hamburg, 25 4 pks.	
Coal Products (otherwise undes.)—	
Dieppe, 147 cks. 2 cs.	
Colours—	
Antwerp, 4 cks.	
Hamburg, 1 pkge.	
Rotterdam, 1	
St. Thomas, 9	
Manure—	
Antwerp, 40 t.	
Malmo, 6 cks.	
Soap—	
Dieppe, 6 cs.	

THE CHEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

418.

SATURDAY, MAY 25, 1895.

Vol. XVI.

Contents.

	PAGE		PAGE
Topics	333	Miscellaneous Chemical Market ..	339
of the Chemical Trades ..	334	Hull Paint, Oil, and Colour Report ..	339
a Vitriol Works	334	Liverpool Mineral Market	340
Intelligence	335	The Metal Market	340
Memoranda	336	West of Scotland Chemicals	340
ing Chromium in Chrome ..	336	Liverpool Oil and Colour Market ..	340
Companies	337	Tyne Chemical Report	340
Shelf	338	New Companies	341
ation of Ramie	339	The Patent List	341
Imports	339	Gazette Notices	341
Ammonia Products	339	Imports	341
Manure Material	339	Exports	344
		Prices Current	348

ADVERTISEMENT.

HANIC desires Change; 16 years' experience
in Chemical Works making Vitriol, Bleach, Alkali, Caustic Soda,
understands Engines, Boilers, and Pumps, etc.—Address, "MECHANIC,"
Trade Journal Office, Manchester.

Notices.

Communications for the *Chemical Trade Journal* should be
sent to the Editor, and Cheques and Post Office Orders made payable to—
DAVIS BROS., 32, Blackfriars Street, MANCHESTER.

Our Registered Telegraphic Address is—

"Expert, Manchester."

Terms of Subscription, commencing at any date, to the
Trade Journal,—payable in advance,—including postage
to all parts of the world, are as follows:—

Early (52 numbers) 12s. 6d.
Half-Yearly (26 numbers) 6s. 6d.
Quarterly (13 numbers) 3s. 6d.

Subscribers will oblige by making their remittances for subscriptions by
Post Office Order, crossed and payable to "Davis Bros."

Contributors are invited to forward items of intelligence, or cuttings from
newspapers, of interest to the trades concerned.

Communications for the Editor, if intended for insertion in the
next week's issue, should reach the office not later than Tuesday
evening.

Advertisements.

Advertisements of Situations Vacant, Premises on Sale or To be Let
and other Wants, and Specific Articles for Sale by Private Contract are
taken in the *Chemical Trade Journal* at the following rates:—

10 Words and under 2s. 6d. per insertion.
Each additional 10 words 6d. "

Advertisements, Announcements in the Directory Columns, and all Adver-
tisements prepaid, are charged at the Tariff rates, which will be forwarded on
application.

Advertisements intended for insertion in the current week's issue
should reach the office by Thursday morning at the latest.

CURRENT TOPICS.

THE NITRATE INDUSTRY.

THE nitrate of soda industry during the past few weeks
has assumed a position which is full of interest. The
absence of any renewal of the Combine has had a most
depressing influence upon prices, but the causes of the failure
of the Combine are of even greater importance, as the fight
that is being fought just now will have a very far-reaching
influence upon the future of the industry.

As is only to be expected, on the matter of production there
must be an absolute consensus of opinion before any combi-
nation can be consummated. It appears that some producers
have been in the habit of taking advantage of this fact in the
past by holding back. Their reason for so doing has been to
obtain certain concessions for themselves. This practice has
become so general, and the demands made by certain com-
panies in connection with the last attempt to renew the
Combine were so extraordinary, that the other producers
determined to make a stand by refusing to grant such
extravagant concessions as were demanded. In consequence,
of course, the Combine fell through. Matters have so fallen
out as to favour in a large measure the tactics of the majority,
as the fall in prices will tell on the obstructing companies;
while it is not at all unlikely that, owing to the almost
disastrous state of prices for distant shipment having
virtually rendered forward selling an impossibility, the two
companies that are now standing out will ere long be only
too glad to fall into line and resuscitate prices. An insight
into the general opinion on the prospects in this industry is
to be gathered from the recent sale of nitrate grounds, at
which all the purchasers were Chileans, while the few
grounds sold fetched about £17,000 less than the upset
price. The number of new large producers, combined with
the absence of the controlling influence of any agreement as
to output, must have an effect upon the prosperity of the
industry; and though just now we hear on all sides most
satisfactory and pleasing reports, we fear such reports will
be few and far between this time next year, unless matters
are nursed for a while.

Supposing the combine is effected before long, there will
have to be a more extensive individual limitation of output,
owing to the increased number of producers. This amounts
to smaller individual profits (and consequently dividends),
and the contemplation of this is shown by the large sums
several of the companies are carrying forward as compared
with former years. The wisdom of so doing is undoubted,
but the very act is a witness that our apprehensions are not
merely chimera.

In the present state of affairs there is scarcely need for
alarm, but caution is advisable. The internal conflict of the
past few months will, we think, do much to facilitate the
organisation of the Combine in the future, and this alone is

reassuring. This week has also brought news which will be acceptable to actual producers at all events. The San Patricio Nitrate Company, Limited, which was floated last November, looked like being an important concern, had it not met an unexpected check in the dispute that arose between the vendor and the company. In March a report published in the *Journal* stated it was anticipated that eventually things would be mutually arranged, and so they have in a sense, but not exactly in the way the report at that time might lead anybody to suppose. The difficulties in the way of the purchase of the property in Tarapaca have proved insurmountable, so the directors have decided to wind up the company and to return the share capital with a bonus of sixpence per share.

By this action the number of new large producing concerns is reduced to three, all of which, it may be mentioned, are willing to form a combine if the Rosario and Lautaro Companies will withdraw the prohibitive terms they have so far stood out for. No doubt in time the state of the market will work the desired change, if nothing else does. A number of other companies, however, will have suffered in the meantime, if the dispute is unduly prolonged, and for this reason we consider exaggerated accounts of the industry should be accepted with caution. The present struggle, if carried to the bitter end, will be attended with serious results, but a definite understanding as to "concessions" is necessary for the successful conduct of future agreements. This possibility must be faced by the smaller companies at once, though it is to be hoped for the sake of the majority that the matter may be satisfactorily and amicably arbitrated in the near future.

WHERE WAS THE OXYGEN BOTTLE?

We record this week an unfortunate instance of "gassing" at a chemical works, which terminated fatally, under circumstances which, to judge by the evidence given at the inquiry, might, to say the least, have been mitigated.

From all accounts it would appear that a workman employed in the de-arsenification of vitriol with sulphuretted hydrogen in some way became "gassed." Such things will happen, and often are as much the result of the carelessness of the workman as the fault of the plant. This fact, however, does not lessen the necessity of having the means at hand wherewith to promptly treat such cases.

We have repeatedly referred to the well-nigh invaluable aid the oxygen bottle is capable of rendering in various forms of "gassing," and in the case in point we have another instance in which it is hard to suppose the oxygen cure would not have proved very beneficial. We are always willing to learn more about the practical results obtained by the use of oxygen gas as a resuscitant, and would once more urge upon chemical manufacturers the desirability of at least giving this agent a fair trial by more extended use. It is far less costly than a fatality, and simpler by a long way than many of the traditional rough and ready, not to say malefic, methods of dealing with cases of "gassing."

A PREMIUM FOR POTASSIUM CYANIDE MANUFACTURE.—The New Zealand Colonial Government has offered a prize of £1,000. for the first 200 tons of crude potassium cyanide manufactured from local produce. Nitrogenous refuse suitable for this manufacture ought to be abundant. The puzzle will be to find the potash.

INSECT PESTS.—Miss E. A. Ormerod has just issued a very valuable leaflet on the Forest Fly, which is found on various kinds of animals, and is a well-known trouble in the New Forest of Hampshire and its neighbourhood. Copies can be had gratis by sending a stamped envelope to Miss Ormerod, at Torrington House, St. Albans. This talented lady has also made another issue (being the 136th thousand) of a leaflet on the Ox Warble Fly.

THE STATE OF THE CHEMICAL TRADE

CHEMICAL works in the Wear and Tyne district are Round Bolton, bleachers, dyers and printers are fairly busy. The calico printing and dyeing works in the neighbourhood of Accrington are more fully employed. There is much change among chemical, glass, and salt workers in Manchester. Paper pulp workers are busy at Barrow. At St. Helens glass works are rather busier, but the chemical trade, as also at Winsford shows no improvement. Things are rather slack in Middlewich, but the chemical industry is still depressed. The crushing industry round Hull is fairly good, the quietness in being counterbalanced by the activity in paints and colours, and bleachers in the Belper district are slack. About Wolverhampton galvanisers are busy, and enamellers of hollow ware are well employed. Other classes of enamelling are quiet. At West Bromwich chemical trade is moderate. Things are rather quiet in the industries in and near Bristol. The glass bottle trade is moderate in South Wales. The Patent Fuel trade, though it is at all events improving.

FATALITY AT A VITRIOL WORKS

An inquest was held at the Mater Hospital last week on the James Cox, who died at the vitriol works of the De Wicklow Manure Company, Limited, Ballybough, from the inhaling some acid gas, whilst engaged at his work on a tower above works, called the "Arsenic Tower."

Mr. Geo. Collins (of Messrs. Casey and Clay), represented the company, and the next-of-kin of the deceased was represented by James Brady, solicitor.

Deceased's widow was examined, and deposed that her husband aged about 37, that he had seven children, and up to the time of his death always had excellent health.

James Oliver, night watchman and foreman at the works, deposed that the deceased came to work at ten o'clock on the night of his death; that during the night he saw him, between twelve o'clock, and again at three o'clock in the morning, when the deceased came down from the tower and stated he had got a mouthful of He (deceased) immediately went up on the tower again. In a few minutes afterwards witness proceeded up the tower, and found the deceased struggling hard, and as if in a fit.

On cross-examination by Mr. Brady, the witness admitted that he remained with the deceased struggling in this manner until about six o'clock in the morning, when he left him and went outside the works, and called in some other workmen, who arrived a few minutes later, thus leaving the deceased for nearly three hours without rendering him any practical assistance.

James Hughes was examined, and deposed to the last witness on him, and to his bringing the deceased away from the works about six o'clock in the morning on a float, and arriving in the morning at about 6.20. Witness alleged that he thought the deceased was before he left the works.

Peter Hope, another witness, was examined, and deposed to the nature of the work at which the deceased was employed.

Mr. Edward Pascoe, the manager of the works, was examined, and deposed that deceased had been in their employment for a considerable number of years. Mr. Pascoe detailed to the jury the nature of the work at which deceased was employed, and also informed them of the machinery used, etc.

On cross-examination by Mr. Brady, he admitted that deceased had been practically been working at his employment night and day, the 3rd May, up to the date of his death; that deceased was employed as an acid-maker, and that he believed it was in the acid gas from the pipes that caused his death. He admitted it was the duty of the night watchman and foreman to look after the premises and the men working there, and that nothing was done. He also admitted that deceased's wages were 16s. 6d. per week, and that for the overtime he worked at night, of seven hours, he was 7d. additional.

The acting coroner, Dr. Fottrell (in the absence of the coroner J. E. Kenney, M.P.), commented strongly on the conduct of the watchman and foreman (Oliver) in allowing the deceased to be long in his death struggles without trying to render proper aid, and in the result the jury found a verdict that the deceased died from inhaling some of the acid gas; that his inhaling the acid gas was caused by a defect in the machinery; that the company were responsible for the accident, and added a rider recommending the widow and her children to the consideration of the company.

Legal Intelligence.

HIGH COURT OF JUSTICE.

CHANCERY DIVISION.

(*per Lord Chief Justice and Mr. Justice Charles.*)

IRWELL JOINT COMMITTEE v SALFORD CORPORATION.
The plaintiffs sought a reversal of the dismissal of an action brought by them against the Salford Corporation for the Rivers Pollution Act, in the County Court of Salford. In dispute was whether the Manchester Ship Canal was the Irwell, a tributary of either of them, or a portion of

them (for the Committee) explained, after giving the dates of the commencement and the opening of the canal for traffic, that the course of the canal was peculiar. The Irwell flowed through the area before the canal was made, and after a devious course fell by near Warrington. The Irwell came into the Ship Canal at Salford Docks, and from that spot to Partington basin it was the Canal, some parts being in the original bed of the river, other parts the course of the stream being diverted into the Canal at Partington basin. The Irwell originally was the Mersey, and as a matter of fact, did so now, only the river

At Warburton there was a bifurcation, the Canal falling into the Mersey, and the river flowing through the Mersey. There was also a tributary of the Irwell which fell into the Mersey. Supposing the Manchester Ship Canal had not been made, the Committee would have been right in instituting this action for the question of canalisation the Joint Committee was within their rights. He wished their Lordships to say that the Canal was to all intents and purposes the river, and that the County Court judge was wrong in dismissing the summons on the ground that as a Joint Committee had no jurisdiction now that the Manchester Ship Canal took the place of the Irwell from Salford Docks to Warburton.

The Corporation (for the Corporation) said that his main point was that the Manchester Ship Canal was not a tributary or portion of the Mersey, inasmuch as the powers given to the Canal Company were to regulate the waters of the Irwell and tributaries and the Mersey, and in no sense was it to be regarded as a river, and, in fact, it was not a river, stream, or tributary. It was that it was wrong to say in any sense that the Canal was a tributary of the Mersey at any point after the Mersey's junction with the Irwell. Nine-tenths of the water went out into the Mersey at Rixton, but if they were allowed to treat the Canal as a tributary at that point, they must take it as a tributary of the Mersey. In all purposes there were two Merseys, and the Irwell had to be treated as a part of the Canal to the west or south of Warburton.

The Lord Chief Justice, delivering judgment, said that in this case, had the defendants, the Salford Corporation, permitted sewage to flow into the Mersey, the Irwell, or either of them, and if that were so, had the plaintiffs a right to sue for such pollution? The County Court judge held that there was pollution in that the Corporation of Salford rendered the sewage harmless. The case for the defendants was that the sewage was discharged into the Manchester Ship Canal, and not into the Mersey, the Irwell, or any tributary. The County Court judge took that view and decided in favour of the defendants, holding that the plaintiffs were not entitled to sue. The County Court judge, in order of time, in 1876 the Rivers Pollution Act was passed. In 1885 came the local and personal Act for the construction of the Manchester Ship Canal, and the waters of the Irwell and Mersey to be used for the purpose of the Canal.

Those rivers constituted the main drainage artery of the area. The works were begun the following year, namely, in 1886. The Local Government Act passed. By section 14 (3) of that Act, power was conferred on county councils the powers of sanitary authorities under the Rivers Pollution Act, and on an application by a county council the Local Government Board were empowered to appoint a joint committee of county councils and other authorities to regulate the waters of the area, which should confer some or all of the powers conferred upon that committee. It was obvious that this was a most important and useful measure, for it enabled a powerful body to regulate the waters of a wide area. This body would be a more effective body, and would be able to undertake serious work necessary, and therefore better able to carry into effect the provisions of the Rivers Pollution Act than a body of a smaller area. In 1891 the Lancashire and Cheshire Local Government Board were formed, and some of them, were minded to bring about the constitution of a joint committee as above mentioned. On May 8, 1891, the Local Government Board made a Provisional Order to

the effect desired; that order was confirmed by Act of Parliament on July 3, 1891. What was the existing state of affairs at that time? It was clear that the waters of the Irwell and Mersey then existed; they were, in fact, mentioned in the Local Government Board's order as existing. The Lord Chief Justice then read the order. It was obvious, therefore, that in July, 1891, when the Legislature sanctioned the Provisional Order it was intended to confer powers of dealing with the waters of the rivers Irwell and Mersey, if polluted. That being so the works were proceeded with and the Canal was opened in January, 1894. The question then arose, had the rivers Irwell and Mersey, which, in 1891, undoubtedly existed, ceased to do so in 1894? That this should be alleged to be the case was an extraordinary suggestion. The order made by the Local Government Board gave into the care of the committee the main artery of the drainage of the district and also the tributaries thereto. There was no reason for doubting that the language of the order, made some years after the Canal had been commenced, was intended to apply to the rivers Mersey and Irwell, as modified by the Canal. It was indeed conceivable that the water of a river might be taken, and so diverted from its natural course and natural fall as to cease to be the river. That, however, was not the case here; the facts were these. For a space above Manchester the Irwell continued its natural course, then came the works of the Canal, in parts utilising, in parts deepening, in parts widening, the natural bed of the Irwell. Then there were parts in which the sinuosities of the river were shortened. Then came some sections which followed the natural channel, and some in which it was straightened. But for some miles above the Mersey weir the spot where the Irwell joined the Mersey, the actual line of the Canal, was coincident with the actual line of the Irwell, and again, for some miles after the junction of the two rivers, it was coincident with the line of the old course of the Mersey. Then, at a place lower down called the Rixton junction, nine-tenths of the water of the Mersey flowed down into the natural channel towards Warrington. This proportion was provided for by the statute in order to keep alive the rights of certain persons at Warrington. Lower down still a certain other proportion of the water flowing along the Canal from Rixton junction was returned into the river Mersey. The waters, therefore, of the Irwell flowed down the Canal, and they were the same waters. The waters of the Mersey also flowed down it. All that had been done was to modify the natural flow of the two rivers, and the continuity of the two rivers remained the same. Looking at the object of the order, there seemed to be insuperable difficulties in the way of any other construction. For what could be said to have happened to the Mersey and Irwell, if they were not continued in the canal? Could it be said they had ceased to exist? If so it followed that there could be no tributaries to them. The result of this would be that the committee must have lost its jurisdiction over the other rivers, which were, in fact, tributaries of those rivers, and that was a most unreasonable supposition. Or, again, was it conceivable that in those parts where the Mersey flowed in its natural bed it should be taken to remain the Mersey, and when it was altered from its old course it should not? In the opinion of the Court, the County Court Judge had arrived at a wrong conclusion in holding that the plaintiffs had no authority to sue. On the proper construction of the Provisional Order it must be said that the Manchester Ship Canal was included in the words "rivers Irwell or Mersey, or tributaries thereof."

Mr. Justice Charles concurred in the reasons and judgment of the Lord Chief Justice, and thought it unnecessary to add anything at length. The language of the 11th Article of the Provisional Order defined territory and did not restrict powers. Over the territory thus defined the Local Government Board had conferred on the committee plenary authority with respect to that territory. At the date of the Provisional Order there was a river Irwell and a river Mersey. The County Court Judge thought that what happened after had extinguished these rivers and replaced them with a new entity. However, between Manchester and the Mersey weir the Canal for miles followed the course of the Irwell, and after it the course of the Mersey. The contention that, under those circumstances, these waters had ceased to be the Irwell or the Mersey was not well founded. The appeal must be allowed.

Leave to appeal was given.

MAKING ACETANILIDE.—We learn that the Clayton Aniline Company, Clayton, Manchester, having laid down all the necessary plant, are now manufacturing acetanilide. It is guaranteed to be perfectly pure.

THE WONDERS OF THE CANDLE.—Professor Crookes considers that had the electric light been universal at the present day, the candle, if suddenly introduced, would be thought a wonderful invention. The arguments advanced would be that it enables any person readily to obtain light in its simplest and most portable form, and without the use of cumbrous machinery, or the necessity of attaching the lamp to any fixed points by means of wires before it could be lighted.

ed Auckland to tide over periods of serious commercial with comparatively little difficulty. It has also been of vast hundreds of settlers with but small capital; not a few, who ed a large measure of prosperity, look back gratefully to the ed by casual work on the gum-fields.

ommissioner's report it is stated that the average earnings of on lease or private land are 27s. per week, while the actual ng is from 10s. to 12s. As the digger has no difficulty in g a weatherproof hut, he is not called upon to pay house-rewood also is obtained free of cost, so that he clears from per week above the cost of living. As a matter of fact, ous digger is in a more favourable position than the figures ndicate, since the average earnings are unduly lowered by e of a number of old people, who have taken to the work, if others who are content to live from hand to mouth and hard work as possible. To men of a roving disposition, ependant life has great attractions, and when coupled with y of earning sufficient for a livelihood there is little cause for t so many prefer it to the somewhat monotonous existence nary settler. It would be difficult to name any other pro- can be so easily obtained in such remunerative quantities r previous outlay.

MARKET IN TUNIS FOR BRITISH GOODS.

Drummond-Hay, Her Majesty's Consul-General at Tunis, ch to the Foreign Office, dated the 19th March, states hat er of considerable surprise that English manufacturers have more advantage of the lenient treatment which they at oy, and which enables them to compete with their superior al terms, as regards duties, with French manufacturers.

tatter of fact our goods are not properly represented here, t but think that if the Chambers of Commerce in England py themselves a little as regards this matter the market be very largely increased.

the last year or two English goods were greatly handi- he difficulties and expense of transit, but now there is a of steamers running fortnightly from Manchester (the e'). This company ran a line of steamers monthly from Tunis till the close of last year, when they had to take it not pay. They now run direct from London to Malta, pment there to Tunis.

t, if these facts were generally known, more English goods brought here. It seems to me that, with the present diffi- ding markets, the English manufacturer would do well to pete with the French, which I am inclined to think that der present circumstances do, with success."

MINING CHROMIUM IN CHROME ORE.

BY EDMUND CLARK.

TORER and others have suggested the use of nitric acid otassium chlorate as agents for the oxidation of chromic to chromic acid. Using this suggestion as a basis for the on of chromium in chrome iron ore, I have experimented od which has proved both practicable and accurate.

lete analysis a half gram sample of the finely ground ore is o a platinum crucible with a capacity of not less than fifty e is covered with twenty-five grams of potassium bisulphate s commenced over a Bunsen burner with very low flame tected from air currents by a sheet iron chimney.

e complete fusion, and to guard against any loss, the e must manipulate carefully and watch the operation from o end. At first, the flame should be so low as to fuse the ery slowly.

mass is in a liquid condition, and there is no longer any ss from spattering, the crucible is grasped with a pair of gs and the contents are run up around the sides, in order to of any particle of ore which may have become stranded

age of the process, the flame may be increased a little so as lerable redness of the bottom of the crucible.

is of ten minutes the crucible must be manipulated by the before described. Forty minutes will suffice for complete on of the ore. Pour the contents into a perfectly clean and e five-inch platinum evaporating dish, making as thin a mass as possible. Place the crucible and cover in a twelve- r and reserve for the solution.

contents of the dish quickly by means of a shallow vessel of hich should be immediately at hand. Cover the dish ble watch-glass to prevent loss of particles by the sudden

contraction of the cooling mass. When cool, rinse off the watch glass and add thirty-five cc. of hydrochloric acid (1.20 sp. gr.) and twenty-five cc. of water.

Boil quietly over the flame, keeping the watch-glass on, until the solution is complete, usually requiring about fifteen minutes. Transfer the solution, with care, to the beaker containing the crucible, and warm on the steam-bath until the crucible and cover can be washed free from the bisulphate fusion. The solution now occupies about 100 cc.

Let contents practically settle, then decant the clear supernatant fluid into another twelve-ounce beaker and add fifteen cc. more of hydrochloric acid to the residue. Heat on the steam-bath until nothing but silica remains undissolved. Unite solutions and filter, reserving the filtrate and igniting the filter. Weigh as silica.

The filtrate, which should be easily contained in a twelve-ounce beaker, is now rendered slightly alkaline with ammonia.

The dirty, reddish green precipitate consists of the hydroxides of chromium, aluminum, and iron. These are warmed on the steam-bath until the smell of ammonia is faintly perceptible. Filter on a fifteen cm. filter without washing, and dissolve the collected hydroxides into the original beaker with dilute hydrochloric acid. Reprecipitate with ammonia and collect on the same filter as before, washing carefully three times with hot water, combine the two filtrates, and in the united solution determine lime and magnesia by any good method.

Transfer the filter containing the precipitated hydroxides to a four and one-half inch porcelain evaporating dish and cover with a five-inch watch-glass. Add fifty cc. of nitric acid (1.42 sp. gr.) and heat gently over a Bunsen flame. From time to time carefully add potassium chlorate with a small glass or porcelain spatula. The addition of this reagent is attended with small explosions, which should be reduced in violence, as much as possible, by adding small quantities and not too frequently. Great care should be taken here to avoid loss from spattering.

The gradual oxidation may be noticed by the changing of the dirty green colour of the emulsion to a clear orange-red solution. The organic matter of the filter-paper has been completely oxidized along with the chromic hydroxide. The complete oxidation is easily detected, but a small excess of potassium chlorate is added to insure it. The chromium now exists as chromic acid.

Transfer the solution to a twelve-ounce beaker, making up to about 150 cc. with water, and precipitate the iron and alumina with ammonia. Filter into a sixteen-ounce beaker without washing. Dissolve the precipitate on the filter with warm, dilute nitric acid, and wash thoroughly, allowing the solution to run into the beaker in which the precipitation was made. Reprecipitate with ammonia, and throw the precipitate on the same filter, allowing the filtrate to be caught in the same beaker as was the first filtrate. Separate, and determine, the iron and alumina by any good method.

The ammoniacal filtrate contains the chromium as ammonium chromate. Acidify with hydrochloric acid, and add a sufficient quantity of strong sulphurous acid water to completely reduce the chromium. The clear, bright green colour imparted to the solution is an indication of the complete reduction.

The excess of sulphurous acid must be driven off. This may be done by boiling, but it may be accomplished in a highly satisfactory manner by leaving the open beaker to remain on a steam-bath over night.

Upon the complete removal of the sulphurous acid, the solution is rendered just alkaline with ammonia, with a final addition of three or four drops in excess. Stir well with a glass rod and heat over a lamp until the smell of ammonia is only faintly perceptible. We have, now, a precipitate of chromium hydroxide ready for filtration. Filter on a 12.5 cm. filter, and allow it to drain without washing out the beaker or washing the precipitate. After the precipitate has drained, wash it carefully back into the beaker by inverting the funnel and using warm water. Add more warm water, and stir to insure complete solution of all alkaline salts.

Throw the precipitate back upon the same filter, and wash three times with hot water. Drain, dry, and ignite in a platinum crucible, and weigh as chromium sesquioxide.

Another method of determining the chromium in the yellow solution of ammonium chromate, and one which many chemists may consider the more expedient, is as follows:

Moderately acidify the ammonium chromate solution with acetic acid and warm. Add an excess of a clear solution of plumbic acetate, and allow the precipitate of plumbic chromate to settle in a warm place for several hours; then collect on a weighed filter (previously dried at 100° C.), and wash with cold water.

Dry at a temperature of 100° to 110° C. and weigh. The increase of weight is the weight of the plumbic chromate, from which the percentage of chromic oxide may be calculated.

The choice given to either of these methods for the final precipitation of chromium is purely arbitrary.

Trade Notes.

KEROSENE OIL IN BOMBAY.—The *Bombay Samachar* is glad that measures have been adopted to import kerosene oil in tank steamers, and it is quite on the cards that the oil, which is growing dearer of late, can be obtained very cheap if means are adopted for storing the commodity in some convenient part of the city. If the inhabitants of Bombay desire to break the neck of the monopoly in the commodity they should urge the necessity of erecting such store-houses in the city.

SOCIETY OF CHEMICAL INDUSTRY, Manchester Section.—The seventh meeting of this Society was held on Friday at the Victoria Hotel, when the following papers were read:—On the treatment of zinc ores and complex ores containing zinc, by Peter Hart, F.I.C., F.C.S., &c. The effect of various enrichers on coal and other gases, by Wilfrid Irwin, F.I.C., F.C.S. Discussion on Mr. Stenhouse's paper. Dr. B. W. Gerland exhibited a balance by Kuhlmann, with his new reading by enlarging mirror and improved arrestment.

WOOD PULP via THE SHIP CANAL.—An unusually large quantity of wood pulp was discharged at the Manchester docks by steamers from the Baltic during the week ending the 15th inst. The arrivals included 5,330 bales from Ahus, 340 bales from Christiana, 260 bales from Drammen, 5,716 bales from Gothenburg, 1,014 bales from Hango, and 1,362 bales from Halmstadt, a total 14,022 bales. The arrivals at other ports were:—London, 4,785 bales and 250 tons; Preston, 7,578 bales; Hull, 3,262 bales; Grangemouth, 2,428 bales; Granton, 2,141 bales; Glasgow, 800 bales; and Leith, 729 bales. No arrivals are reported at Liverpool. It is interesting to observe that of the 6,617 bales imported from Finland 6,344 came to Manchester, the remaining 273 bales being discharged at Hull.

INFLUENCE OF MANURE ON MANGOLDS.—The ill-effects which are noticeable after the use for pigs of mangolds grown on light land, by the aid of heavy crops of artificial manure, are not frequently observed when the mangolds have been grown under other conditions, but we should recommend the exposure of the roots to the atmosphere for a certain time before they are fed to the pigs. One of our most successful breeders of pigs, whose herd numbers from three to five hundred pigs, declares that it would be well-nigh impossible for him to manage his pigs successfully without the aid of mangolds, and these are grown with a heavy and sometimes a double dressing of pig muck, followed with two or three applications of nitrate of soda at various stages of growth, so that they receive when growing a large proportion of their sustenance from manure, natural and artificial. There are two other points which should be noticed, the land on which they are grown is either mixed soil or clay, and the roots are always taken out of the clumps and subjected, more or less, to exposure for a few days.—*Mark Lane Express.*

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzols are flat and cheap, both 90's and 50/90's being quoted 11½d. There is practically no change in the price of carbolic acid for both crystals and crude, which are quoted respectively 6¾d. for 40% and 1s. 8½d. per gallon for 60%. Crude naphtha is unaltered, but solvent is rather easier at 1s. Creosote and anthracene are quiet and easy in price. Pitch steady at 36s., f.o.b. East Coast.

Sulphate of ammonia is on the whole fairly steady, the lower quotations that are current being applicable only to re-sales, or the forward dealings of "bears." The inquiry has certainly been better if the actual sales have not been very extensive. Quotations nearest to real values are:—London outside makes £9. 12s. 6d., Liverpool £9. 15s., Hull £9. 12s. 6d., and Leith £9. 11s. 3d. to £9. 12s. 6d. Nitrate steady.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—Business continues fairly active; still the advances made in prices during last week have been almost lost during this week. It is announced from Alexandria that out of a total shipment during this season of cottonseed of 247,190 tons, 132,550 tons have been the aggregate sent to Hull, against last year 167,920 tons out of a total of 307,890 tons, and 1893 165,500 tons out of a total of 311,870 tons. The imports of cottonseed here during the week are 4,266 tons, and of linseed 10,441 quarters. Of rapeseed there have been no arrivals. Linseed oil quiet at 19s. 4½d. naked, spot; May-Aug. offer at 19s. 6d., and Sept.-Dec. at 19s. 1½d. Boiled and refined from £1. to £1. 10s. per ton extra. Export for the week, 2,140 cwt. Refined cotton oil dull at 16s. 7½d. naked, spot. May-Aug. offer at 16s. 10½d., and Nov.-April at 17s. 1½d.; crude ditto, upon the spot, 15s. 1½d.

Casks 17s. 6d. and barrels 27s. 6d. per ton extra. Export of refined 4,040 cwt. Cod oil continues scarce and dear; prices unchanged. Tallow 24s. 3d. per cwt. Castor oil from 2¼d. per lb. for first pressure, Sod oil scarce, from £17. per ton. Spirits of turpentine 23s. 3d. per cwt. Olive oil from £32. per tun. Liquid scouring soap for wool dressing, £16 per ton. Wool cream for carding purposes, £12. per ton. Soft soap 14s. 6d. per cwt.

CAKES.—Linseed cakes: Demand small, as is usual at this season of the year; 95% pure, £5. 17s. 6d. Russians, £5. 12s. 6d. Germans, £5. 12s. 6d. per ton. Oil cakes, £5. 2s. 6d. Cotton cakes unaltered; best makes £3. 15s.; seconds, £3. 10s. Rape cakes: Black Sea, £2. 12s. 6d.; feeding, £4. 7s. 6d.; East Indian, £3. 7s. 6d. per ton.

PAINTS.—Makers continue very busy with a good all round demand. Prices are: Oxide of zinc, unchanged. Venetian red, dry, £4. per ton; in oil, £11. Yellow ochre from £3. 17s. 6d.; in oil £11. White and red leads unchanged. Blue-black and mineral black from £3. 15s. per ton. Ultramarines from 3d. to 8d. per lb. Vermilionettes from 4d. to 1s. per lb. Imperial black varnish in good demand, £5. 10s. per ton. Paint remover, 25s. to 30s. per cwt. Oak varnish from 5s. 6d. per gallon.

REPORT ON MANURE MATERIAL.

The attitude of buyers remains very much as last reported. At the close of a disappointing manure season they are in no hurry to avail of the low prices current for purchasing extensively ahead, although the level reached would seem to be a safe one. Sellers of 75/80% Florida phosphate rock are firm at 7¾d. per unit, in cargoes, cost, freight, and insurance, to good United Kingdom ports, 1895-1896 steamer shipment, but business does not result. The lower grades are less firmly held, and 5¾d. per unit would be accepted for South Carolina and similar grade of Algerian. Peace River rock, being in smaller supply, is held for rather more money. It is reported that a large cargo of River Plate bones has been sold at £4. 2s. 6d. per ton, delivered good United Kingdom ports. For autumn shipment suitable vessels are very scarce, and £4. 5s., or possibly £4. 7s. 6d. per ton, may have to be paid for anything of handy size. Crushed Kurrahee bones for autumn shipment offer at £4. 5s. per ton, ex quay Liverpool, but, so far, without finding buyers. £4. 5s., ex quay Liverpool, is now required for Bombay bone meal, summer shipment, and this price has been refused for September-October steamer. On spot the value is £4. 5s. to £4. 7s. 6d. per ton. Nitrate of soda is firmer in all positions. On spot, 8s. 4½d. now required for refined, 8s. 3d. per cwt. for good, and 8s. for inferior. For September-October shipment the equivalent of about 8s. 5½d. has been paid, meaning an 1896 spring price of 8s. 6d. to 8s. 9d. per cwt., if the opinion of the buyers in question is justified. In miscellaneous material there is nothing special to report, any business done being on private terms, and particulars are not being allowed to transpire.

MISCELLANEOUS CHEMICAL MARKET.

In the alkali trade there is still a fairly active demand for the staple products. Considerable business has been done in chloride of potash, and price has now advanced to 5d. per lb. Chlorate of soda 6½d. per lb. Bleaching powder is going steadily, and price f.o.b. Liverpool in hardwood casks is £7. 5s. per ton; lower prices, however, are being taken for the Continent; softwoods, free on rails makers' works, £7. per ton. Caustic soda all round is rather firmer in tone, but quotations are nominally unchanged, viz.:—F.o.b. Liverpool, 77%, £9. 7s. 6d.; 74%, £8. 7s. 6d.; 70%, £7. 10s.; 60%, £6. 10s. per ton, 10-ton lots and upwards. Alkali, 58%, £3. per ton, bags, f.o.r. makers' works. Soda crystals £2. 16s. 6d. per ton, bags. Some rumours are on foot of an arrangement between the leading makers to prevent the ruinous competition in prices to which ammonia alkali has for some time past been subjected. Sulphur is without change, and is only a quiet market. Sulphate of copper steady at £15. 10s. to £15. 15s., f.o.b. Nitrate of soda 8s. 1½d. per cwt. Demand still continues good for potash, caustic and carbonate, and values are well maintained. Brown acetate of lime is slightly better, and demand for other acetates and acetic acid is still quiet, and generally these products are without any improvement in value. White powdered arsenic is still very scarce, and price firm at £14. 12s. 6d. to £14. 15s. nett. Supplies of china clay are less abundant, and consequently better prices are ruling. Borax and boracic acid are still extremely quiet, and selling at low prices. Prussiate of potash is said to be a little firmer, and nominally at 8d. per lb. Carbolic acid crystals still in good request, and makers are asking higher prices. Sulphocyanides are slightly easier. Sulphate of iron is less abundant in supply, and prices have been generally advanced. Aniline oil and salt are without any improvement. The position of the chemical trade generally from all reports is still far from satisfactory.

LIVERPOOL MINERAL MARKET.

less in our market reported last week has been well and in some articles there has been an advance in figures.

Arrivals are practically *nil*, and prices remain steady and Ground manganese continues in steady demand at £6., and £12. 10s. per ton, according to quality. Manganiferous w at 15s. to 17s. per ton, c.l.f., in cargoes. Bauxite continues in demand, especially for the Irish Hill brand, aluminium manu now treating for a large output, and prices are firm at 20s. 1st quality, 16s. per ton for second quality, and 12s. per quality, f.o.b., in cargoes, with the probability of an route ore: There have been some arrivals this week, lity, but, having been sold for forward deliveries, which time, prices are strong, with a firmer tendency: for 40%, and 110s. to 115s. per ton for 50% ore. Stocks continue to be reduced, and imports are scarcely with the consumption, in consequence of the increased for new and special purposes: prices are steady 90s., and 110s. per ton for "Angel White" ing to quality. Tungsten alloy is steady at unaltered d. to 2s. per lb. Chrome alloy is in strong demand at £ for 20% to 25%, with other grades in proportion stimes to sell freely for fine qualities. Arsenic is steady per ton. Carbamate of larynes is somewhat easier, but firm. Sulphate of barytes is in good demand for good st lump and ground. China clay: A steady business is about abatement in prices. Serpentine is being inquired o, but prices remain unaltered at £10. to £15. per ton, quality. Red oxides are in fair demand at 7s. 6d. to 15s. ex. F.C., are at 60s., and other grades according to quality. Levigated, 40s. to 60s. per ton, f.o.b., in lugs.

THE METAL MARKETS.

WEDNESDAY. — Fig 1000, steady; Scotch warranis 3½, Middleburg 35, 1½¢ cash, and hematite 3000, steady; Chili bars, G. O. B.'s and G. M. B.'s, 1½¢ 90¢ to 2½¢ 30¢ 90¢ cash, and £43 12s. 6d. to three months. Tin, steady; Straits closed at £65 10s. to 10s. cash, and £66 to £66 10s. 3d. three months; 6 7½ 6d. English ingots, £66 10s. to £70. Lead, quiet; 10 10 10, £100 7s. 6d. Silman's spelter, ordinary, 10 10 10; Nickel, 2 to 2½. Antimony, better, £31 15s. first hands, £27 3s.; second hands, £27 3s. 6d. steady; Copra, 2½ to 2½; Copra, 2 to 2½; Liliola, 2000 and Bars, 2½ to 2½; Rio Tinto, 15½ to 15½.

WEDNESDAY.—Market firmer, with moderate business.
43s. 6d. and 43s. 3½d. cash, also at 43s. 5d. one
with buyers at 43s. 3½d. cash, sellers ask 43s. 4d.
with buyers at 35s. 1½d. cash, sellers ask 35s. 3d.
maize closes with buyers at 43s. 7½d. cash, sellers
Middlesbrough hematite closes with buyers at 42s. 3d.
42s. 6d. Market closed to-morrow.

OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.
 elegants of all the Scottish Mineral Oil companies met in present position on the market of burning oil, four pence from 4½d. per gallon to 7½d. It was the that the advance had been pitched a little too high, present is the off season for consumption, and accorded to drop one of the three pennies in the meantime. ever, to be no selling forward at this lowered rate of ers hold themselves open at any time to resume the or to go even higher, should the American stock warrant that. Another annual report, that of the out. There is a dividend of 5% for the ordinary

disappointment of the makers, sulphate of ammonia is in, and for prompt £10. has been accepted for certain. as been taken. At the same time, all inclination in the ward fixtures has been killed, so far, that is, as regards iron, and this department of the market is again a blank. chemical market has no further changes of importance, is perhaps rather firmer, reports pointing to diminishing works.

current are:—Soda crystals, 35s. nett, Tyne; #6, £3. 15s. to £4. 5s. nett, Tyne; white alkali, to £5. 5s. nett, Tyne; alum in lump, £5. 10s. nett,

Glasgow; caustic soda, white, 74° L° , 70/72° L° . 15s., L° 6. 15s., and cream 60/62° L° . 10s., all nett, Liverpool; powder, L° 6. 5s. to L° 7., nett, Tyne; salicake, 17s. 6d.; borax refined, L° 20., and boracic acid, L° 30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, L° 6. 10s., and 1-cwt. casks L° 6. 15s. nett, Liverpool; bichromate of potash, $\frac{3}{4}$ d. nett, for Scotch and English deliveries, export, $\frac{3}{4}$ d. nett, f.o.b. Glasgow; bichromate of soda, $\frac{3}{4}$ d. nett, Scotch and English deliveries (for export, $\frac{3}{4}$ d. nett, f.o.b. Glasgow); chloride of potash, $\frac{3}{4}$ d. less 5%, Liverpool; nitrate of soda, 8s. 3d.; sulphate of ammonia, L° 10. prompt f.o.b. Liverpool; salammoniac, first and second white, L° 39. and L° 37. nett, Liverpool; sulphate of copper, L° 15. 15s., less 5%, Liverpool; paraffin seed, 2½d.; and soft, 1¾d. to 2¾d. per lb.; paraffin wax 120° set, 2¾d. to 2¾d.; paraffin spirit (naphtha), 5d. to 6d. per gallon; paraffin oil (burning), No. 1, 6½d. and crystal 6¼d. at w. Scotch buyers (English sales 1d. lower); ditto (lubricating), L° 4. 5s.; 88½° L° 4. 10s. to L° 5., and 89/89½° L° 5. to L° 5. 10s. imports of sugar at Greenock were 4,074 bags cane unrefined, 1,000 bags beet unrefined, and 5,800 bags beet refined.

LIVERPOOL OIL AND COLOUR MARKET

OILS.—Palm oil, though steady, is quiet. There has moderate but rather trifling business doing in Lagos at £30. Ac ra at £19. Olive is fairly active and steady in price. There has been no change in linseed, which is still quoted 21s. 3d. to 22s. 6d. per cwt. for Liverpool makes in export casks. Holders are firm at the price. Cottonseed is steady. Liverpool refined is rather active and steadily held for 18s. 3d. to 19s. per cwt., American unrefined 18s. to 18s. 3d. according to quantity. Castor oil is firm, pure in good seconds Calcutta at 2½d. First pressure French is 2½d. to 2½d. per lb. Tallow is in better demand, with a firm price. Resin shows no sign of weakness as regards price, but there are slackenings in the demand. Spirits of turpentine, after a weakening, are rather firmer at the close; the price, however, 22s. 9d. to 23s. per cwt. Petroleum keeps steady at 6½d. for American, and 6d. per gallon for Russian refined.

COLOURS are steady, without alteration in
Ochres: Oxfordshire, common, £10.; medium, £12.; best, Derbyshire, common, 40s.; medium, 50s., best, 60s.; Welsh 90s., seconds, 50s., and common, 18s.; Irish, Devonshire, 45s.; French, J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Turkish quiet; Devonshire, 50s. to 55s. White lead, £16. unchanged. Venetian red, £6. to £10. Cobalt: Prepared 9s. 9d.; black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; 2s. 6d. Oxide of iron: Common, £7.; medium, £10.; finest Zinc oxide, £22. 10s. to £25.

TYNE CHEMICAL REPORT

In chemicals the tone of the market is quiet, but there is considerable amount of business being done. Prices continue variation. Sulphur, £3. 17s. 6d. to £4. 0 per ton; 76/77% cassel £9. 10s. per ton; 70%, £7. 15s. per ton. Bleaching powder, £7. 5s. per ton. Soda crystals, £1. 16s. 6d. per ton, gross locally.

Bleaching powder, softs, £7. 5s. per ton, nett; hard, £7. 10s. nett; caustic soda, 76/77%, £9. 10s. per ton, nett; do., 70%, £8. 10s. per ton, nett; recovered sulphur, 2 cwt. bags, £4. 10s. per ton, nett; soda ash, 48%, £3. 15s. per ton, nett; do., 52%, £4. 2s. 6d. per ton, nett; do., 56%, £4. 10s. per ton, nett; alkali, 36%, £4. 10s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 52%, £5. 15s. per ton, nett; do., 52%, £5. 3s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. per ton, nett; do., 1 cwt. bags, £6. 10s. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. per ton, nett; soda crystals, casks, £1. 16s. 6d. per gross weight; do., 2 cwt. bags, £1. 16s. 6d. per ton, nett; chlorate of potash, 5¼d. per lb., less 6%; pearl ash, £3. per ton, nett; pure white sulphate of alumina, £2. 10s. per ton, nett; blanc fixe, £7. 10s. per ton, nett; chloride of lime, £7. 10s. per ton, nett; carbonate of alumina, £28. 15s. per ton, nett; aluminate of soda, £33. 15s. per ton, nett; in 5 ton bags, £10s. per ton, nett.

SALT,—South Durham salt is firm, at 9s. to 9s. 6d. per f o. b. Tees.

COALS.—Trade is steady as far as best steam qualities are concerned, and fuller work at many of the collieries is anticipated. Best Northumbrian steam, 8s. 9d. to 9s. per ton; second quality 8s. to 8s. 6d. per ton; small steam, 3s. 6d. to 4s. per ton; in coals, plentiful, 6s. 3d. to 6s. 6d. per ton; coke, standard, 12s. 6d. per ton.

Canada, 80	Furness, Withy & Co.	U. States, 775 pks 4,321 c.	R. G. Hall & Co.	E. Indies, 1,162 bgs.	Lucas & Spencer's Wf. Co.	Antofagasta, 430 bgs.
France, 40	Union L. Co.	" 100 620	Falkenberg & Hesse	Sodium Hyposulphite—	J. Owen	" 134 A. G.
" 575	Boucher, Mortimore & Co.	" 650 650	Barrett, Tagant & Co.	Holland, 200 pks.	F. Boehm	" 195
Denmark, 22	A. F. White & Co.	Glue—		Germany, 186		Antimony Ore—
R. W. L. Gambler	A. Low, Son & Co.	" 41 339		Belgium, 220 pks.	T. H. Lee	Valparaiso, 600 bgs.
Germany, 153 pks.	S. Figgis & Co.	Iron Oxide—	M. D. Co.	Holland, 380	A. Starck	Asbestos—
E. Indies, 40	Brinkmann & Co.	" Persia, 105 t		" 154	Taylor Bros	B. Ayres, 4 cks.
" 197	E. Boustead & Co.	Manganese Borate—	Petri Bros	" 140	G. S. N. Co.	Barytes—
" 265	L. & I. D. It. Co.	" Germany, 20 pks.		" 626	Saver, Sons & Co.	Bremerhaven, 107 cks 100 l.
France, 56	Brown & Elmslie	Manganese Sulphate—	Petri Bros	" 131	Prep. Scott's Wf. F. Claydon & Co.	
Indigo		" Germany, 2 pks.		Germany, 45	Phillips & Graves	Antwerp, 39 130
E. Indies, 156 cts.	J. Owen	Manure—		Holland, 255	H. Johnson & Sons	Rotterdam, 45
" 13	F. W. Heiglers & Co.	Chili, 2,490 t.	W. Montgomery & Co.	Belgium, 180	Herne & Co.	Bone Ash—
Germany, 13	Park, Macfadyen & Co.	U. States, 11	Vokins & Co., Ltd.	Germany, 1,000	Arnati & Harrison	B. Ayres, 470 bgs.
East Indies, 15	H. Johnson & Sons	Germany, 45	F. W. Berk & Co. Ltd.	Belgium, 100	Little & Johnston	Boric Acid—
" 48	Park, Macfadyen & Co.	France, 400	Perkins & Homer	Holland, 566		Leghorn, 22 cks. 100 l.
" 1	Parsons & Keith	Aden, 53	Odams Manure Co.	France, 21 sks.	T. Trapp & Sons	Hamburg, 1
" 84	Ross & Deering		Culverwell, Brooks & Co.	120	Walbaum & Tosetti	Borate of Lime—
" 8	Arbuthnot, Latnam & Co.	Methyl Alcohol—		Italy, 6 t.	F. C. Devon & Co.	Antofagasta, 1,350 sks.
" 10	Blyth, Greene & Co.	" Germany, 18 dms.	Stein Bros.	" 4	A. Hughes	Borax—
" 122	L. & I. D. It. Co.	" 7 cks. L. & I. D. It. Co.	W. Ashwell	" 8	B. Jacob & Sons	Hamburg, 1 cks.
" 66	Croydale & Co.	Holland, 100 carboys		" 14	G. Boor & Co.	Calcium—
" 31	Parry & Co.	Molasses—		" 11	Smith & Co.	Antwerp, 22 cks. 200 l.
" 17	F. Huth & Co.	" U. States, 250 cks. 331 c.	J. Newcomb	" 5	Typke & King	Castor Oil—
" 34	Elkan & Co.	B. W. L., 99 1,000	Co-op. Lgtg. Assn. Middleton's Wf. Co., Ltd.	" 500	Brandram Bros & Co.	Leghorn, 10 cks.
Madder				" 300	W. C. Bacon & Co.	Hamburg, 4
France, 4 pks.	Skillbeck Bros.	Sweden, 672 340	J. R. Francis & Co.	" 32	Co-op. Lightg. Association	Chemicals (otherwise un-
Myrabolams		B. W. L., 56 672	Carey & Browne	" 20	M. D. Co.	Hamburg, 10 cks. 5 c.
E. Indies, 204 pks.	Arbuthnot, Ewart & Co.	B. Guiana, 56 672		Talc—	E. Indies, 4,576	Baltimore, 10
" 2,049	W. Shelcott			Tartaric Acid—	W. M. Smith & Sons	Philadelphia, 8
" 2,712	Beresford & Co.	Naphthalene—		" 50 pks.	Kirkpatrick & Co.	Chloroform and Acids—
" 653	Brown & Elmslie	" Belgium, 27 pks.	Stobbs & Wilson	France, 16	B. & F. Wf. Co.	Havre, 12 c.
" 1,234	Lucas & Spencer's Wf. Co.	" 27	Union L. Co.	Holland, 4	F. C. Devon & Co.	Chrome Ore—
" 2,580	Baxter & Hoare	Ochre—		Turpentine—		Volo, 300 t. G.G.
" 1,766	F. Claydon & Co.	" Belgium, 9 cks.	F. Claydon & Co.	N. Russia, 52 brls.	Atlantic Wf. Oil Co.	Colours—
" 2,706	Blyth, Green & Co.	Holland, 1 cks. 7 pks.	Phillips & Graves	Ultramarine—		Antwerp, 1 cks.
Orchella		France, 21	J. L. Lyon & Co.	" 66 pks.	W. Harrison & Co.	Hamburg, 10 cks.
Madagascar, 7 pks.	L. & I. D. It. Co.	" 106	W. Harrison & Co.	Belgium, 18 cks.	C. J. Langmead	Cottonseed Oil—
Italy, 500 pks.	J. Kitchin Ltd.	Paraffin Wax—		France, 20	Amati & Harrison	N. Orleans, 2,074 lbs.
" 41	Beath, Schies & Co.	" U. States, 1,205 brls.	G. H. Frank	Belgium, 9 cks.	Haefliger, Hilpert, & Co.	New York, 319
" 100	W. Barter & Co.	Germany, 75	C. Hickman & Co.	Holland, 7 brls.	G. Rahn & Co.	Norfolk, 600
" 330	Union L. Co.	U. States, 102	H. Hill & Sons	" 47 pks.	Spies Bros. & Co.	Dyestuffs—
Tanner's Bark		Phosphate Rock—		Germany, 47 pks.	Steinhoff, Sons, & Co.	Argols
Natal, 50 t.	Boucher, Mortimore & Co.	" Belgium, 250 t.	D. de Pass & Co.	Yarnish—		Oporto, 27 bgs.
Turmeric		France, 200	T. Farmer & Co.	Germany, 6 pks.	L. & I. Dk. Co.	Cutch
Cochin, 200 t.	J. Forsey	" 325	A. Hunter & Co.	Germany, 12	Flageolet & Co.	Rangoon, 1,127 bgs.
" 400	H. A. Litchfield & Co.	Phosphate of Lime—		France, 1 pks.	B. & F. Wf. Co.	Divi Divi
Valonia		" France, 100 t.	Odams Chemical Manure Co.	White Lead—		Hamburg, 435 bgs.
E. Turkey, 10 t.	Schlosser Bros	Pitch—		Germany, 38 cks.	D. Storer & Sons	Havre, 545
A. Turkey, 25	A. & W. Nesbitt	" Germany, 12 brls.	A. Dexter & Co.	" 45	N. J. Fenner & Co.	Extracts
" 12	F. W. Honischer & Co.	Plumbago—		" 35	Spies Bros. & Co.	New York, 5 brls.
" 54	Anning & Cobb	" Cochin, 274 cks		" 57	Randall Bros.	Fiume, 205
Greece, 13	Parbury & Co.	Germany, 42	Brown & Elmslie	" 50 brls.	Magee, Taylor, & Co.	Baltimore, 104
A. Turkey, 10	Hicks, Nash & Co.	Potash—		Wood Pulp—		Philadelphia, 25
Dyestuffs (otherwise undescribed)		" Germany, 12 pks.	L. & I. D. It. Co.	Sweden, 700 pks.	Henderson, Craig, & Co.	Baltimore, 1,227 lbs.
A. Turkey, 150 pks.	Major & Field	Potassium Carbonate—		" 50	W. G. Taylor & Co.	10,179
France, 8	W. Burton & Sons	" Holland, 105 c.	A. J. Luke & Co.	" 50 brls.	G. Rahn & Co.	Valencia, 3 cks.
Farina—		" France, 42 cks.	E. Cook & Co.	" 20	C. S. Lovell	Palermo, 450 bgs.
Germany, 300 pks.	Seaward Bros	" France, 114 c.	Charles & Fox	" 166 pks.	Henderson, Craig, & Co.	Trieste, 20
Holland, 50	J. Knill & Co.	" 90	Petri Bros	Norway, 25	Tough & Henderson	Valonia
Germany, 50	"	Potassium Chlorate—		Germany, 38 bls.	Thames S. T. & L. Co. Ltd	Marathonia, 205 t.
Glucose—		" Belgium, 40 pks.	J. W. Drysdale & Co.	Canada, 6,047	E. J. & W. Goldsmith	Marseilles, 23 bgs.
France, 200 pks., 200 c.	A. J. Smith	Potassium Cyanide—		Belgium, 3,124 pks.	F. Claydon & Co.	Syria, 200
U. States, 150 850 c.	Newcomb	" Germany, 12 pks.	Beresford & Co.	Norway, 480	W. G. Taylor & Co.	Farina—
" 150 903	Pomb	Potassium Hydrate—		Holland, 359	Elkman Pulp & Paper Co.	Marseilles, 190 bgs.
" 200 1,114	Son & East	" France, 6 bgs	Spies Bros. & Co.	Norway, 90	E. J. & W. Goldsmith	Trieste, 200
" 25 137	Crosse & Blackwell	Potassium Sulphate—		Germany, 121	H. C. Everett	French Chalk
" 50 300	Union L. Co.	" Germany, 121 pks.	W. G. Blagden & Co.	Holland, 100 brls.	M. Ashby, Ltd.	Messina, 20 bgs.
" 50 200	J. Allen & Co.	Pumice Stone—		" 12	J. Owen	Glucose—
" 50 200	B. & N. Wv. Co.	" Germany, 10 c.	E. Fellingham	" 50 pks.	J. Matton	New York, 200 lbs.
" 800 9,165	Ohlenschlager Bros	Italy, 3 t.	O'Hara & Hoar	Germany, 100 brls.	M. Ashby, Ltd.	Baltimore, 250
" 50 280	J. Barber & Co.	" 3	Burrell & Co.	U. States, 200 100 pks.		Philadelphia, 20
" 50 285	L. & N. W. Rail.	" 2	H. B. Adler & Co.	Holland, 50	Burrell & Co.	Glue—
France, 200 200	L. Norman & Co., Ltd.	Pyrites—				Hamburg, 7 bgs.
U. States, 150 832	Soundy & Sons	" Spain, 1,140	C. Tennant, Sons, & Co.			Genoa, 20 cks.
" 30 300	T. J. Lipton	Quicksilver—				Fiume, 204
France, 120 120	G. Clark & Son	" Italy, 100 brls.	H. Bath & Son			Reum, 20
U. States, 795 4,517	L. Sutro & Co.	" Spain, 5,000	N. M. Rothschild & Sons			
" 50 286	J. Keiller & Son, Ltd.	Rosin—				
		" Germany, 10 brls.	H. Lambert			
		Saltpetre—				
		" Germany, 149 bgs.	C. Wimble & Co.			
		" 56 cks.	P. Hecker & Son			
		" 40	J. Hall & Son			

Linseed Oil — Antwerp, 1 brl.	
Magnesite — Hamburg, 22 bgs.	
Manure — Hamburg, 1,038 bgs.	
Mineral White — Fiume, 50 bgs.	
Ochre — Carthage, 214 brls. Rouen, 20 cks.	R. J. Francis & Co.
Oxalic Acid — Rotterdam, 6 cks.	
Paint — Hamburg, 62 cks.	
Paraffin Scale — New York, 1,342 brls.	Thompson Bedford
Baltimore, 201	
Philadelphia, 400	
Paraffin Wax — Philadelphia, 132 brls.	
Phosphate — Bona, 1,350 t.	
Potash — Hamburg, 176 cks. Antwerp, 10 dms.	
Pumice Stone — Leghorn, 10 cs. Messina, 10 4 cks.	
Pyrates — Huelva, 1,430 t.	Matheson & Co.
Rosin — Parnabyba, 29 bgs.	Gunston, Sons & Co.
Saltpetre — Hamburg, 6 cks. 50 bgs.	
Soap — N Orleans, 231 brls. Gd. Bassam, 1 bx.	
Sodium Silicate — Rotterdam, 3 cks.	
Starch — New York, 250 sks. Fiume, 400 bgs. Antwerp, 176 cs.	J. T. Fletcher & Co.
" Rotterdam, 120	
" 50	
Stearine — Antwerp, 49 bgs.	
Sulphur — Catania, 300 t. 75 bgs. 75 pkgs.	
Tallow — New York, 200 tcs. B. Ayres, 107 pkgs.	
Tartar — Bordeaux, 19 cks.	
Tartaric Acid — Marseilles, 14 cks. Bordeaux, 5	
Treacle — Philadelphia, 250 brls.	Richardson, Spence & Co.
Turpentine — Havre, 1 cs.	Cunard S. S. Co. Ltd.
Verdigris — Bordeaux, 3 cks.	
White Lead — Trieste, 10 cs. Rotterdam, 60 cks.	Mander Brs.
Wood Pulp — Portland, M., 725 bds. Skien, 5,778 bds.	A Rice & Co. H. Tyrer & Co.
Zinc Oxide — Hamburg, 3 cks. Antwerp, 87 brls. Rotterdam, 75	

MANCHESTER.

Week ending May 11th.

Acetate of Lime — New York, 2,250 cs.	
Alum Cake — Rotterdam, 60 bgs.	
Alumina Sulphate — Rotterdam, 38 cks.	
Caustic Potash — Treport, 41 dms.	Arnati & Harrison

Chemicals (otherwise undescribed) — Bordeaux, 17 cks. New York, 18 Hamburg, 3 cs.	J. & P. Hutchinson & Co.
Colours — Hamburg, 4 cks. 5 cs. Rotterdam, 35 27 brls. 5 bxs. Antwerp, 24 Stettin, 4	Stott, Coker, & Co.
Cream of Tartar — Rotterdam, 20 kgs.	
Dyestuffs — Alizarine Rotterdam, 45 cks. Bordeaux, 15 cks.	J. & P. Hutchinson & Co.
Extracts — Treport, 31 cks. 34 pkgs.	Arnati & Harrison
Nantes, 60	J. & P. Hutchinson & Co.
Bordeaux, 50	
Rotterdam, 10	10 cs. "
Hamburg, 636 lbs. qty.	
Farina — Hamburg, 356 bgs. Stettin, 100	Stott, Coker, & Co.
Glue — Treport, 45 cks.	Arnati & Harrison
Hamburg, 20 bgs.	
Limestone — Antwerp, 3 pkgs.	
Magnesium Sulphate — Hamburg, 500 bgs.	
Ochre — Treport, 20 cks.	Arnati & Harrison
Ozokerit — Stettin, 20 bgs.	Stott, Coker, & Co.
Potash — Hamburg, 30 cks. Antwerp, 40 dms.	
Saltpetre — Hamburg, 1 ck.	
Soap — Rotterdam, 2 cs.	
Sodium — Hamburg, 7 cs.	
Sodium Prussiate — Antwerp, 11 brls.	
Starch — New York, 1,200 bgs. Antwerp, 120 cs.	
Tar Oil — Antwerp, 26 cks.	
Tartar — Bordeaux, 2 cks.	J. & P. Hutchinson & Co.
Tartar Emetic — Hamburg, 26 cks.	
Tartaric Acid — Rotterdam, 2 cks.	
Waste Salt — Treport, 9 cks.	Arnati & Harrison
Hamburg, qty.	
Wood Pulp — Gothenburg, 4,041 bds.	Stott, Coker, & Co.
Ahus, 5,330	A. Wertheim & Co.
Zinc Oxide — Rotterdam, 50 brls. Antwerp, 85	

HULL.

Week ending May 11th.

Acetate — New York, 3,196 bgs.	Wilson, Sons, & Co., Ltd.
Acetic Acid — Rotterdam, 20 blns. 13 cks.	Hutchinson & Son
Acid — Trieste, 1 ck.	Wilson, Sons, & Co., Ltd.
Bari, 25	"
Alkali — Bremen, 6 pkgs.	Veltmann & Co.

Asbestos — Genoa, 5 bls.	
Barytes — Rotterdam, 75 cks.	W. & C. L. Ringrose
" 96	Hutchinson & Son
Antwerp, 187	100 bgs. Bailey & Leatham
Bremen, 44	Veltmann & Co.
Castor Oil — Genoa, 30 cs.	Wilson, Sons, & Co., Ltd.
Chemicals (otherwise undescribed) — Bremen, 1 bkt. 6 pkgs.	Veltmann & Co.
Rotterdam, 1 ck.	W. & C. L. Ringrose
Antwerp, 35 pkgs.	Wilson, Sons, & Co., Ltd.
Dunkirk, 30 cks.	"
Cod Oil — Aalesund, 62 brls.	Wilson, Sons, & Co., Ltd.
Bergen, 66	"
Colours — Stettin, 20 cks.	Wilson, Sons, & Co., Ltd.
Antwerp, 35	21 kgs. "
Danzig, 38	brls. "
Rotterdam, 6	127 pkgs. W. & C. L. Ringrose
" 7	2 bxs. Hutchinson & Son
Cryolite — Copenhagen, 4 cks.	Wilson, Sons, & Co., Ltd.
Dextrine — Stettin, 100 bgs.	Wilson, Sons, & Co., Ltd.
Dyestuffs — Alizarine Rotterdam, 10 brls.	Hutchinson & Son
Rotterdam, 89 cks. 2 pkgs.	W. & C. L. Ringrose
Argols — Bari, 2 cks.	Wilson, Sons, & Co., Ltd.
Cutch — Hamburg, 44 cs.	Wilson, Sons, & Co., Ltd.
Indigo — Trieste, 3 cs.	Wilson, Sons, & Co., Ltd.
Sumac — Trieste, 5 bgs.	Wilson, Sons, & Co., Ltd.
Palermo, 125	160 bls. "
610	
Valonia — Smyrna, 100 t.	
Farina — Stettin, 600 bgs. Antwerp, 150	Wilson, Sons, & Co., Ltd.
Glucose — New York, 200 brls.	
Glue — Stettin, 2 cks.	Wilson, Sons, & Co., Ltd.
Bremen, 161 bls.	Veltmann & Co.
Rouen, 9 cks.	Rawson & Robinson
Hamburg, 4	100 bgs. Wilson, Sons, & Co., Ltd.
Antwerp, 10	"
Hamburg, 100 bgs.	Sissons Brs & Co.
Hydrofluoric Acid — Hamburg, 3 cs.	Bailey & Leatham
Lead Acetate — Stettin, 27 brls.	
Manure — Antwerp, 100 t.	Wilson, Sons, & Co., Ltd.
Mineral White — Fiume, 5 bgs.	Wilson, Sons, & Co., Ltd.
" 20	"
Naphthalene — Stettin, 95 cks.	Wilson, Sons, & Co., Ltd.
Naphthol — Hamburg, 7 cks.	Wilson, Sons, & Co., Ltd.
Ochre — Marseilles, 32 cks.	Wilson, Sons, & Co., Ltd.

Paint — Boston, 51 cs.	Wilson, Sons, & Co., Ltd.
Phosphate — Dunkirk, 2,100 bgs.	Wilson, Sons, & Co., Ltd.
Phosphorus — New York, 7 cs.	Wilson, Sons, & Co., Ltd.
Pitch — Antwerp, 19 cks.	Bailey & Leatham
Hamburg, 1 brl.	Wilson, Sons, & Co., Ltd.
Rotterdam, 1 ck.	W. & C. L. Ringrose
Plumbago — Hamburg, 25 cks.	Wilson, Sons, & Co., Ltd.
Potash — Rotterdam, 20 cks.	Hutchinson & Son
Hamburg, 10	G. Holmes & Co.
Pumice Stone — Leghorn, 32 cs. 91 pkgs.	Wilson, Sons, & Co., Ltd.
Messina, 42 bgs. 46 pkgs.	Wilson, Sons, & Co., Ltd.
46 cks.	
Quicksilver — Hamburg, 5 blts.	Wilson, Sons, & Co., Ltd.
Soap — Rotterdam, 6 cs.	W. & C. L. Ringrose
Naples, 19	"
Marseilles, 2	Wilson, Sons, & Co., Ltd.
Bari, 14	"
301	"
26	"
Starch — Stettin, 8 cks.	Wilson, Sons, & Co., Ltd.
Antwerp, 404 cs.	Bailey & Leatham
Bremen, 1,271	Veltmann & Co.
Amsterdam, 30	W. & C. L. Ringrose
Stearine — Antwerp, 12 bgs.	Wilson, Sons, & Co., Ltd.
Tallow — Libau, 1 cs.	
Tartaric Acid — Rotterdam, 8 cks.	Hutchinson & Son
" 25	W. & C. L. Ringrose
Treacle — Stettin, 5 cks.	Wilson, Sons, & Co., Ltd.
Boston, 318 bls. 106 pkgs.	"
New York, 550	262 "
Turpentine — Stettin, 1 ck.	
Ultramarine — Rotterdam, 4 cks.	W. & C. L. Ringrose
Bremen, 6	Sissons Brs. & Co.
Varnish — Rotterdam, 4 cks.	Hutchinson & Son
Waste Salt — Hamburg, 1,750 bgs.	Bailey & Leatham
" 820	Wilson, Sons, & Co., Ltd.
White Lead — Rotterdam, 74 cks.	Hutchinson & Son
Antwerp, 55	Bailey & Leatham
Rotterdam, 24	W. & C. L. Ringrose
Wood Pulp — Hango, 76 bls.	J. Good & Sons
" 22	Furley & Co.
275	
Zinc Oxide — Antwerp, 50 cks.	Bailey & Leatham

GLASGOW.

Week ending May 16th.

Acetate of Lime — New York, 1,997 bgs.	
Acetic Acid — Rotterdam, 14 cks.	J. Rankine & Son

Alum Earth— Hamburg, 12 cks. Tyne S. S. Co. Borax— Antwerp, 2 brls. Tyne S. S. Co. Cod Oil— Bergen, 22 brls. Dumfries, 6 Bergen, 17 Colours— Hamburg, 2 cks. Tyne S. S. Co. Glucose— New York, 50 brls. Furness, Withy, & Co. Glue— Hamburg, 40 bgs. Tyne S. S. Co. Limestone— Antwerp, 4 cks. Tyne S. S. Co. Phosphate— Antwerp, 250 t. Langdale's Chemical M. Co. Pyrites— Hamburg, 1,700 t. Scott Bros. Saltpetre— Hamburg, 3 cks. Tyne S. S. Co. Sodium Nitrate— Liquipet, 1,200 t. J. Cameron, Swan & Co. Search— Rotterdam, 100 cks. Tyne S. S. Co. Antwerp, 96 Stearine— New York, 50 pkgs. Furness, Withy, & Co. Tartaric Acid— Rotterdam, 3 cks. Tyne S. S. Co. Wood Pulp— Siam, 150 tls. 250	Healthful— Hamburg, 2 cks. Borax— Antwerp, 2 brls. Cod Oil— Bergen, 22 brls. Dumfries, 6 Bergen, 17 Colours— Hamburg, 2 cks. Tyne S. S. Co. Glucose— New York, 50 brls. Furness, Withy, & Co. Glue— Hamburg, 40 bgs. Tyne S. S. Co. Limestone— Antwerp, 4 cks. Tyne S. S. Co. Phosphate— Antwerp, 250 t. Langdale's Chemical M. Co. Pyrites— Hamburg, 1,700 t. Scott Bros. Saltpetre— Hamburg, 3 cks. Tyne S. S. Co. Sodium Nitrate— Liquipet, 1,200 t. J. Cameron, Swan & Co. Search— Rotterdam, 100 cks. Tyne S. S. Co. Antwerp, 96 Stearine— New York, 50 pkgs. Furness, Withy, & Co. Tartaric Acid— Rotterdam, 3 cks. Tyne S. S. Co. Wood Pulp— Siam, 150 tls. 250	Logwood Jamaica, 500 t. Madder Rotterdam, 6 cks. Dyestuffs (otherwise undescribed) Rotterdam, 99 cks. 13 cks. Boulogne, 55 8 5500 Farina— Hamburg, 3,700 bgs. Delfsdyhl, 248 Glucose— Hamburg, 2 cks. Dunkirk, 100 bgs. Potash— Antwerp, 8 dms. Dunkirk, 28 Calais, 5 Saltpetre— Rotterdam, 85 bgs. Hamburg, 6 cks. Antwerp, 71 Soda— Rotterdam, 1 cks. Starch— Rotterdam, 26 cks. Tartaric Acid— Rotterdam, 2 cks. Waste Salt— Hamburg, 640 cks.
GRIMSBY. Week ending May 21st.		
Albumen— Hamburg, 5 cks. Chutcheon— Rotterdam, 2 cks. Hamburg, 5 cks. Chemicals (otherwise undescribed) Hamburg, 11 cks. 10 cks. Colours— Hamburg, 48 cks. 17 pkgs. Antwerp, 84 76 Dyestuffs (otherwise undescribed) Dieppe, 9 cks. Extracts— Dieppe, 30 cks. Starch— Rotterdam, 46 cks. Antwerp, 19 Waste Salt— Hamburg, 502 bgs. Zinc Ashes— Antwerp, 17 cks.	GOOLE. Week ending May 21st.	Albumen— Hamburg, 5 cks. Chutcheon— Rotterdam, 2 cks. Hamburg, 5 cks. Chemicals (otherwise undescribed) Hamburg, 11 cks. 10 cks. Colours— Hamburg, 48 cks. 17 pkgs. Antwerp, 84 76 Dyestuffs (otherwise undescribed) Dieppe, 9 cks. Extracts— Dieppe, 30 cks. Starch— Rotterdam, 46 cks. Antwerp, 19 Waste Salt— Hamburg, 502 bgs. Zinc Ashes— Antwerp, 17 cks.

EXPORTS OF CHEMICAL PRODUCTS
OF
THE PRINCIPAL PORTS OF THE UNITED KINGDOM

[illegible]

neau,	140 t.	15 c.	£915
es,	150		490
burg,	76	3	705
	68	19	155
Acid—			
lay,	17 cs.		£34
ix,	3 cks.		£15
orus—			
	4 c.		£39
	20 cks.		£175
ille,	5 c.		5
	12		35
um Cyanide—			
ille,	3 t.	4 c.	£45
e,	5		500
ai,	5 cs.		850
um Hypophosphite—			
ork,	2 c.		£31
um Prussiate—			
na,	4 cks.		£69
re—	3 t.	6 c.	278
	5 t.		£113
me,	2		47
a,	3		69
urg,	5		130
ton,	1	15 c.	18
lay,	1	17	40
		9	11
Dip—			
lay,	8 t.	10 c.	£130
s,	500 cs.		1,775
rk,	3,000		3,700
	25 dms.		11
re,	1 t.	6 c.	£8
its—	10 t.	10 c.	£162
Bicarbonate			
de,	13 c.		£8
ai,	1 t.	9	10
me,	1 t.	7 c.	£10
Hypophosphite—			
rk,	4 c.		£77
Sulphate—			
150 t.			£150
um Nitrate—			
rk,	2 c.		£48
	10 t.		£47
own,	21	4 c.	475 cks. 709
a,	1	10	12
ia,	1		12
ic Acid—			
1 t.			£14
o Acid—			
rne,	3 t.		£278
lay,	12	2 c.	
2,	5		23
2,	2		161
3,	3		17

VERPOOL.

Week ending May 15th.

ork,	1 t.	8 c.	£94
	3 t.	10 c.	£17
a,	1	8	1 q.
	5	5	1
a,	14	6	2
	4	14	3
	2	6	3
h,	3	12	3
ancisco,	20	17	3
lake—			
Janeiro,	9 t.	4 c.	£31
a Sulphate—			
dria,	4 t.	2 c.	1 q.
ia—			
ruz,	1 t.	2 c.	1 q.
iacal Liquor—			
rt News,	250 brls.		£468
ium Carbonate—			
	1 t.	4 c.	£6
	15		8
	12		20
ium Chloride—			
n,	10 c.		£18

Hio	10		25
Yokohama,	10		7
Stettin,	6		20
Bilbao,	1 t.		44
Fairwater,	1	4	10
Vigo,	5		
Ammonium Sulphate—			
St. Nazaire,	10 t.	1 c.	1 q.
Corunna,	10		113
Gutajewski,	76	1	3
Genoa,	20	9	1
Antwerp,	50		500
Las Palmas,	50		513
Newport News,	100	19	1,035
New York,	87	2	1
Barcelona,	25	6	1
Samarang,	187	16	1
Sourabaya,	137	4	3
Valencia,	386	19	4,247
Anhydrous Ammonia—			
Hong Kong,	4 c.	2 q.	£38
Antimony—			
Bombay,	4 cs.		
Montreal,	3 t.		
Asbestos—			
Santander,	1 bl.		
Taltal,	3 cs.		
Barium Chlorate—			
Oporto,	2 c.		£8
Bleaching Powder—			
Baltimore,	181 cks.		
Bilbao,	44		
Boston,	805		
Calcutta,		23 cs.	
Dunkirk,	18		
Ghent,	72		
Lisbon,	50		
Montreal,	21		
Naples,	33		
Newport News,	164		
New York,	422		
Philadelphia,	182		
Riga,	54		
San Francisco,		25 brls.	
Venice,	7		
Boracic Acid—			
Halifax,		2 c.	3 q.
Hio,	4 t.	9	3
Hamburg,	1	10	50
Borax—			
Melbourne,	2 t.		£47
Antwerp,	5		110
Montreal,	13	1 c.	1
Halifax,		15	3
New York,	1		21
Rotterdam,	8	11	2
Christiania,		11	12
Yokohama,	3	9	1
Ibrail,		2	1
Riga,	1	5	1
Hamburg,	16	11	3
Stettin,	11	16	1
Danzig,	1	9	1
B. Ayres,	1		21
Calcined Magnesia—			
Lisbon,	1 cs.		
Calcium—			
Pt. Said,	5 t.	1 c.	£18
Carbolic Acid—			
Baltimore,	9 t.	18 c.	2 q.
Genoa,		8	13
Rangoon,		8	10
Hio,		18	3
N. Orleans,	1	15	3
Hamburg,	9		147
Yokohama,	12	10	451
Caustic Potash—			
Hong Kong,	3 c.		£6
Caustic Soda—			
Alexandria,	31 dms.		
Amsterdam,	50		
Ancona,	10		
Antwerp,	10		
Baltimore,	380	30 cks.	
Barcelona,	100		
Bari,	51		
Bilbao,	130	11	
Bombay,	30		
Boston,	125		
Braila,	9		
B. Ayres,	50		
Catania,	30		
Ceara,	30		
Chicago,	50		
Cincinnati,	80		
Dunkirk,	20		
E. London,		25 brs.	
Fairwater,	70		
Ferrol,	7		
Genoa,	30		
Guaymas,	20		
Hamilton,	50		
Havana,	50		

Hong Kong,	2		
La Guayra,	1		
Leghorn,	104		
Malta,	28		
Marseilles,	50		
Newport News,	790	15 brls.	
New York,	220		
Philadelphia,	275	20	
Pt. Elizabeth,		6 brs.	
Puerto Cabello,	18		
Riga,	75		
Rio de Janeiro,	4		
Samarang,	298		
San Francisco,	100		
Santos,	50		
Seville,	140	100 kgs.	
Stockholm,	10		
Tampico,	20		
Valencia,	42		
Valparaiso,	100		
Chemicals (otherwise undescribed)			
B. Ayres,	1 c.		£5
Stockholm,	1 t.		37
Christiania,	5		9
Antwerp,	12		22
Rotterdam,	10	3 q.	19
Philadelphia,	12		412
Naples,	1	4	44
Smyrna,	1		37
Hamburg,	1	13	61
Montreal,	1		34
China Clay—			
Barcelona,	10 t.	6 c.	
Bombay,	187	10	
Boston,	620		
Calcutta,	30		
Hio,	50		
Lisbon,	5	15	
Melbourne,	5		
Montreal,	150		
New York,	120 cks.		
Piraeus,		296 brs.	
Rio de Janeiro,	62		
Chloroform—			
Bombay,	2 cs.		
Rangoon,	1		
Chromic Acid—			
Hamburg,	9 c.		£32
Coal Products—			
Alizarine			
Lisbon,	3 brls.		
Alizarine Oil			
Lisbon,	2 cks.		
Aniline Oil			
Fiume,	10 dms.		
Genoa,	3		
Aniline Salts			
Boston,	20 cs.		
Anthracene			
Rotterdam,	77 cks.		
Creosote Oil			
Lisbon,	200 brls.		
Naphthaline Colours			
New York,	3 cks.		
Pitch			
Ilo-Ilo,	25 brls.		
Pt. Paid,	6		
Rotterdam,	105 t.	13 c.	
Tar			
Kustendjie,	30 brls.		
Lagos,	10		
Puerto Cabello,	20 kgs.		
Sierra Leone,	15 pkgs.		
Tar Salts			
New York,	3 cks.		
Coal Tar Products (otherwise undescribed)			
Philadelphia,	10 cs.	1 kg.	
Cobalt Oxide—			
Rotterdam,	3 c.		£75
Copperas—			
Montreal,	25 cks.		£20
Valencia,	2 t.		5
Alexandria,	27		65
Copper Sulphate—			
B. Ayres,	7 t.		£107
Calamata,	18 c.	2 q.	14
Rouen,	14	4	2
Sydney,	3		44
Nantes,	57	9	2
Bordeaux,	346	3	4,933
Rotterdam,	10		7
Antwerp,	2	1	1
Tarragona,	30	14	1
Newfoundland,	4	5	3
Messina,	2		1
Riga,	7	11	1
Dunkirk,	1	4	2
Galatz,	1		15
Fairwater,		18	13
Paris,	14	17	2
Constantinople,	2		214
Barcelona,	25	1	2
Valencia,	14	19	232

Norrkoping,	1		16
Leghorn,	10	3	158
Oporto,	56	11	2
Santos,		9	7
Genoa,	22	19	346
Venice,	48	1	712
Konigsberg,	3	16	1
Trieste,	2	18	3
Naples,	14	7	1
Farina—			
Lisbon,	2 cks.		
Rio de Janeiro,	10 brs.		
Vera Cruz,	40		
Fluorspar—			
Santander,	3 brls.		
French Chalk—			
Vera Cruz,	40 brs.		
Gelatine—			
Boston,	160 brs.		
New York,	175	2 brs.	
Philadelphia,	100		
Glue—			
Shanghai,	40 tins.		
Guano—			
Santa de Cruz,	10 t.		£35
Gypsum—			
New York,	35 t.	2 c.	£112
Iron Liquor—			
Lisbon,	4 t.	19 c.	£25
Iron Oxide—			
Arica,	1 t.	5 c.	£3
Odessa,	14	2 q.	6
Lime—			
Sierra Leone,	2 t.	10 c.	£5
Quitta,	6	12	6
Litharge—			
Odessa,	13 cks.		
Magnesia—			
Reyroul,	20 cs.		
Bilbao,	50		
Cadiz,	15		
Calcutta,		21 brls.	
Pelotas,	10		
Philadelphia,	45		
Santander,	17		
Vera Cruz,	11		
Magnesium Carbonate—			
Guadalajara,	18 cs.		£40
Magnesium Chloride—			
Paris,	5 t.	2 c.	£12
Magnesium Sulphate—			
Seville,	3 t.		£13
Corfu,	2 cks.		
Naples,	4		
Manganese—			
Santander,	1 brl.		
Manure—			
St. John's, Nfld.,	15 c.		£19
Rocheport,	100 t.		263
St. Nazaire,	600	3	2 q.
Bordeaux,	6	6	2,030
Antwerp,	9	17	60
Oxalic Acid—			
Boston,	28 t.	8 c.	£636
Paint—			
Acra,			12 cs.
Alexandria,	40 tins		
Antwerp,		4 kgs.	
Calcutta,	14 cks		
C. C. Castle,		13	
Cardenas,	8		
Genoa,	3		
Havana,	1		
Honolulu,	80 dms.		
Iquitos,	3 cks.		
Kerassunde,	5		
Lagos,	44 pkgs.	5 dms.	
Larnaca,	2 cks.		
Leghorn,			
Lisbon,	10 brls.	7	5
Loanda,	4		
Manilla,	11		
Mossamedes,	4 dms.		
New York,	6 cks	25	24
Old Calabar,	10 dms.		
Para,	5 cks.	29	5
Rangoon,	5		
Rotterdam,	122 pkgs.		
Samarang,	7 cks.		
Sanchez,	7		
Savannah,			
Sierra Leone,	31		
Taltal,			
Trieste,	10		
Valparaiso,	35		160
Painters' Colours—			
Axim,	2 kgs.		
Bahia,		5 cs.	
Bordeaux,		2	
Boston,			

City	Price	City	Price	City	Price
Amsterdam	100	London	100	San Francisco	100
Antwerp	100	Liverpool	100	San Pedro de Macoris	100
Bombay	100	Manchester	100	Santiago	100
Buenos Aires	100	Paris	100	Santos	100
Calcutta	100	Port of Spain	100	Sao Paulo	100
Canton	100	Rangoon	100	Seville	100
Cebu	100	Shanghai	100	St. Petersburg	100
Colon	100	Singapore	100	Tientsin	100
Hankow	100	Sourabaya	100	Yokohama	100
Hong Kong	100	Tientsin	100		
Kobe	100				
Lyons	100				
Manila	100				
Medan	100				
Minam	100				
Montevideo	100				
Orissa	100				
Panama	100				
Peking	100				
Puerto Rico	100				
Rangoon	100				
San Francisco	100				
Santo Domingo	100				
Sao Paulo	100				
Seville	100				
Shanghai	100				
Singapore	100				
Sourabaya	100				
Tientsin	100				
Yokohama	100				

Callao	10 lbs.	100
Constantinople	10	100
Damascus	148	100
Havana	25	100
Kormichee	375	100
Lisbon	10	100
Malta	10	100
M. Video	50	100
Montreal	100	100
Nantes	44	100
Newfairwater	109	100
Riga	109	100
Rotterdam	6	100
St. Petersburg	500	100
Seville	50	100
Sodium Chlorate—		
Boston	100 kgs.	100
Genoa	20	100
Hamburg	10	100
Newfairwater	12	100
Vera Cruz	8	100
Sodium Hyposulphite—		
Alexandria	10 brls.	100
Sodium Prussiate—		
Montreal	2 cks.	100
Sodium Silicate—		
Bilbao	35 brls.	100
Sodium Sulphate—		
Lisbon	2 cks.	100
Sulphur—		
Calcutta	6 t.	100
Montreal	1	100
Riga	1	100
Copenhagen	67	100
Boston	30	100
Para	4	100
Superphosphate—		
Las Palmas	6 t.	100
Valencia	19	100
Tartaric Acid—		
Callao	2 c.	100
Tresacle—		
Antwerp	25 hf. pms.	100
Christiana	25 cks. 5 brls.	100
Damascus	5	100
Gedde	95	100
Hamburg	10 tcs	100
Hannover	50	100
Norwegian	12 t.	100
Rotterdam	5	100
Sandwell	185	100
Terraces	650 hf. pms.	100
Terraces	23	100
Terpentine—		
Calcutta	204 dms.	100
Lisbon	4	100
Port au Prince	5 brls.	100
Vanish—		
Amoy	4 dms.	100
Batavia	2	100
Bombay	2 cks.	100
Boston	12	100
B. Ayer	6	100
Calcutta	5	100
Cebu	3 cks.	100
Hong Kong	10	100
Shanghai	4 brls.	100
Lyons	5	100
Lisbon	3	100
M. Video	5	100
Nagasaki	8	100
Opium	1	100
St. John's N.Y.	2	100
Sierra Leone	2	100
White Lead—		
Batavia	50 kgs.	100
Cebu	10	100
Cape Town	100 dms.	100
Port au Prince	4 brls.	100
Sierra Leone	100	100
Whiting—		
Barbados	5 cks.	100
Coruna	25 t.	100
Zinc Oxide—		
Cebu	9 c. 3 q.	100
Zinc White—		
Sierra Leone	25 kgs.	100

Aniline Oil—		
Rotterdam	9 dms.	100
Rouen	10	100
Bleaching Powder—		
San Sebastian	27 cks.	100
Boiler Composition—		
Copenhagen	40 cks.	100
Carbolic Acid—		
Treport	198 brls.	100
Caustic Soda—		
San Sebastian	30 dms.	100
Rouen	7	100
Chemicals (otherwise undecr.)		
Antwerp	30 kgs.	100
Colours—		
Rouen	2 cks.	100
Cresote—		
Antwerp	13 cks.	100
Logwood—		
Alexandria	16 brls.	100
Pitch—		
Antwerp	18 t.	100
Treport	17 t.	100
Sulphuric Acid—		
Rio de Janeiro	14 cks.	100
Tar Oil—		
Rotterdam	30 dms.	100
Treport	50 cks.	100
Zinc Chloride—		
Rotterdam	11 cks.	100

HULL.

Week ending May 11th.

Ammonium Sulphate—		
Ghent	100 kgs.	100
Odessa	2	100
Benzol—		
Rotterdam	25 cks.	100
Bleaching Powder—		
Gothenburg	4 cks.	100
Hango	3	100
Caustic Soda—		
Hango	21 dms.	100
Riga	202	100
Chemicals (otherwise undecr.)		
Amsterdam	10 cks.	100
Antwerp	25	100
Copenhagen	9	100
Constantinople	100	100
Christiana	5	100
Drontheim	178 dms.	100
Gothenburg	5 cks.	100
Hamburg	61	100
New York	25	100
Odessa	130	100
Riga	5	100
Rotterdam	116	100
Reval	8	100
Stockholm	6	100
Cottonseed Oil—		
Antwerp	1 162 c.	100
Bremen	184	100
Bergen	48	100
Copenhagen	70	100
Constantinople	23	100
Christiana	231	100
Gedde	100	100
Gothenburg	258	100
Hamburg	4,508	100
Konigsberg	434	100
Rotterdam	4,941	100
Stettin	740	100
Stockholm	1,556	100
Dyestuffs (otherwise undecr.)		
Christiana	12 brls.	100
Dunkirk	1 cks.	100
New York	10	100
Riga	10 125 17 dms.	100
Linseed Oil—		
Bergen	25 c.	100
Christiana	583	100
Christiansund	55	100
Drontheim	229	100
Hamburg	445	100
Rotterdam	369	100
Mineral White—		
Amsterdam	20 t.	100
Oetre—		
Bremen	1 cks.	100
Hamburg	3	100
Painters Colours—		
Amsterdam	2 pags	100
Antwerp	30 cks.	100
Bremen	1	100
Copenhagen	54	100
Christiana	30 pgs.	100

MANCHESTER.

Week ending May 15th

Alum—		
Rouen	5 cks.	100
Ammonium Carbonate—		
Copenhagen	10 kgs.	100
Aniline Colours—		
Rotterdam	2 brls.	100
Aniline Dyes—		
Rouen	1 kg.	100

Dunkirk,	2 cks.	
Ghent,	10	1
Gothenburg,	16	10
Hango,		7 7
Hamburg,	15	1 5
Konigsberg,	54	
New York,	14	
Odessa,	6	
Riga,	15	3 pks. 4
Rotterdam,	41	
Reval,	2	
Rouen,	11	21 pks.
Stavanger,		
Stettin,	41	20 15
Stockholm,	2	
Pitch—		
Amsterdam,	2 bgs.	
Antwerp,	404 t.	
Bergen,	15	
Odessa,		50 cks.
Rotterdam,	85	
Soap—		
Christiania,	2 cs.	
Tallow—		
Gothenburg,	26 cks.	
Rotterdam,	31	
Tar—		
Copenhagen,	10 cks.	
Christiania,		
Hamburg,	15	
Rotterdam,	2	
Stettin,	3	
Treacle—		
Bergen,	3 brls.	
Yarnish—		
Amsterdam,	6 cks.	
Antwerp,		2 cs.
Ghent,	1	
Gothenburg,	2	3
Rotterdam,	5	1 2 cns.

GLASGOW.

Week ending May 16th.

Ammonium Sulphate—		
Demerara,	113 t.	11 c.
Trinidad,	151	7½
Nickerie,	10	16½
U.S.A.,	60	1¼
Asbestos—		
Singapore,		£47. 14s.
Bleaching Powder—		
Calcutta,	72 t.	9 c.
Dunedin,		£23
Boonlay,	3	
Melbourne,	6	5
U.S.A.,	22	13
Castor Oil—		
Adelaide,		£40
Caustic Soda—		
Canada,		£37
Dunedin,		24
China Clay—		
Nova Scotia,	10 t.	19 c.
Coal Products—		
Creosote Oil		
Christiania,		£19
Naphtha		
Antwerp,	26 t.	18 c.
Pitch		
Oporto,		£170
U.S.A.,		195
Antwerp,	520 t.	
Gothenburg,		418
Venice,	639	5
Caen,	193	16
Canada,		200
Madras,		22
Naples,	385	15
Danzig,	65	3
Tar		
Calcutta,		£503
U.S.A.,		260
Christiania,		
Penang,		
Hamburg,		
Norroping,		
Colombo,		
Madras,		
Singapore,		
Vizagapatam,		
Danzig,	650	
Tar Oil		
Danzig,	52 t.	16 c.
Cod Oil—		
Auckland,		£94
Dyestuffs—		
Alizarine		
Montreal,		£130
Extracts		
Montreal,		£116

N. Zealand,	77	
Victoria,	58	
Canada,	253	
Fustic Extract		
Montreal,	£137	
Indigo		
Montreal,	£134	
Logwood		
Dunedin,	£159	
Pt. Lyttelton	27	
Madder		
Montreal,	£53	
Sumac Extract		
Montreal,	£35	
Dyestuffs (otherwise undescribed)		
Montreal,	£40	
Gelatine—		
Dunedin,	£24. 10s.	
U.S.A.,	£1,042	
Linseed Oil—		
Dunedin,	4 t.	3¼ c.
Giaborne,	1	4½
Invercargill,	1	9¼
Napier,	4	9¼
Sydney,	6	
Wellington,	1	8¾
Adelaide,	6	3½
Melbourne,	4	3¼
Cape Town,	1	5
Manila,	8	3½
Singapore,	1	8
Ilo Ilo,	3	6
Litharge—		
Montreal,	£20	
Oporto,	29	
Magnesium Chloride—		
Saigon,	£25	
Magnesium Silicate—		
Saigon,	£30	
Magnesium Sulphate—		
Sydney,	£20	
Manganese—		
Rotterdam,	3 t.	5 c.
Manure—		
Trinidad,	111 t.	18 c.
Paint—		
Dunedin,	£241	
Kingston Jam.,	114	
Sydney,	171	
Bangkok,	150	
Calcutta,	310	
Singapore,	30	
Colombo,	95	
Manila,	290	
Philippine Is.,	210	
Rangoon,	123	
Painters' Colours—		
Invercargill,	£54	
Montreal,	103	
Sydney,	125	
Calcutta,	30	
Manila,	70	
Saigon,	179	
Paraffin Wax—		
Bordeaux,	1 t.	7½ c.
Christiania,	5	
Auckland,		£410
Bari,	34	
Tries e,	46	
Venice,	23	
Yokohama,	2	¾
Antwerp,	62	
Potassium Bichromate—		
U.S.A.,	£1,137	
Amsterdam,	200	
Rotterdam,		qty.
Stockholm,	396	
Antwerp,	132	
Genoa,	93	
Hiogo,	199	
U.S.A.,	3,158	
Potassium Prussiate—		
U.S.A.,	8 t.	19¼ c.
Rosin Oil—		
Amsterdam,	£47	
Soap—		
Grenada,	5 t.	14½ c.
Soda Ash—		
U.S.A.,	£57	
Sodium Bichromate—		
Montreal,	£81	
U.S.A.,	549	
Antwerp,		1 t. 18¼ c.
Canada,	162	
Genoa,	114	
Leghorn,	90	
Sodium Phosphate—		
U.S.A.,	£57	
Superphosphate—		
Auckland,	10 t.	

Tallow—		
Oporto,	1 t.	1 c.
Treacle—		
Christiania,	25 t.	9½ c.
Helsingborg,		£36
Stockholm,	29	
Turpentine—		
Manila,	£119	
Philippine Is.,	52	
Yarnish—		
Sydney,	£31	
Bangkok,	21	
Calcutta,	35	
Manila,	155	
White Lead—		
Calcutta,	£45	
Canterbury,	110	
Dunedin,	180	
Sydney,	25	
Melbourne,	40	
Singapore,	27	
Hong Kong,	75	

TYNE.

Week ending May 11th.

Alkali—		
Hamburg,	16 t.	8 c.
Amsterdam,	19	
Rotterdam,	8	1
Riga,	16	16
Alum Earth—		
Copenhagen,	5 t.	4 c.
Ammonia Alkali—		
Odense,	30 t.	
Ammonium Carbonate—		
Seville,	11 c.	
Antimony—		
Antwerp,	1 t.	
Hamburg,	2	10 c.
Montreal,	4	
Rotterdam,	5	
Arsenic—		
Antwerp,	5 t.	7 c.
Gothenburg,	1	17
Leghorn,	1	10
Barium Binoxide—		
Rouen,	10 t.	
Barium Carbonate—		
Cologne,	184 t.	
Basic Slag—		
Bergen,	4 t.	
Blanc Fixe—		
Montreal,	5 t.	
Bleaching Powder—		
Frederica,	1 t.	
Antwerp,	60	19 c.
Hamburg,	59	15
Amsterdam,	9	5
Christiania,	1	3
Rouen,	10	
Copenhagen,	5	18
Helsingborg,	9	3
Abo,	11	19
Rotterdam,	17	4
Dronheim,	9	18
San Francisco,	54	16
Lisbon,	4	10
Gothenburg,	13	
Bergen,	5	1
Carbolic Acid		
Rotterdam,	8 t.	14 c.
Caustic Soda—		
Antwerp,	11 t.	
Hamburg,	27	5 c.
Amsterdam,	3	
Montreal,	29	
San Francisco,	101	11
Helsingborg,	77	17
Abo,	56	14
Wyborg,	4	5
Rotterdam,	1	9
Genoa,	119	9
Gothenburg,	5	
China Clay—		
San Francisco,	23 t.	4 c.
Glue—		
Bergen,	6 c.	
Linseed Oil—		
Montreal,	5 t.	3 c.
Litharge—		
Hamburg,	1 t.	11 c.
Antwerp,	2	1
Copenhagen,		11
Genoa,	1	2
Lisbon,	7	8
Gothenburg,	1	13
Montreal,	58	8
Magnesia—		
Hamburg,		1 q.

Barcelona,	8 t.	10 c.
Montreal,	1	10
Rouen,		5
Lisbon,		1
Magnesium Sulphate—		
Seville,	3 t.	5 c.
Oxalic Acid—		
Seville,		6 c.
Paint—		
Antwerp,	1 t.	15 c.
Hamburg,		29
Trieste,	2	11
Helsingborg,		10
Bergen,		7
Phosphorus—		
Barcelona,	16 c.	
Seville,	1 t.	9
Soap—		
Copenhagen,		5 c.
Soda—		
Frederica,	30 t.	2 c.
Antwerp,	5	7
Amsterdam,	30	14
Christiania,		5
Randers,	28	3
Helsingborg,	9	6
Abo,	12	6
Hango,		11
Rotterdam,	22	5
Odense,	12	15
Dronheim,	7	1
Bergen,	4	6
Aalborg,	5	9
Soda Ash—		
Christiania,	13 t.	
Helsingborg,	116	12 c.
Sodium Silicate—		
Helsingborg,	5 t.	2 c.
Genoa,	5	3
Sulphur—		
Helsingborg,		3 c.
Tar—		
Libau,	10 t.	9 c.
White Lead—		
Hamburg,		4 c.
Montreal,	73 t.	3
Helsingborg,		10

GOOLE.

Week ending May 8th.

Benzol—		
Hamburg,	48 cks.	
Rotterdam,	50	
Chemicals (otherwise undescribed)		
Boulogne,	1 ck.	
Ghent,		25 pks.
Hamburg,	22	
Rotterdam,		5 cs.
Coal Products (otherwise undescribed)		
Antwerp,		12 cks.
Boulogne,	66	
Dunkirk,		66 bgs.
Ghent,	1	
Hamburg,	7	5 cs.
Rotterdam,	7	
Colours—		
Ghent,		1 cs.
Dyestuffs (otherwise undescribed)		
Hamburg,	28 cks.	
Rotterdam,	1	1 cs.
Manure—		
Ghent,	300 bgs.	
Ostend,	328	
Pitch—		
Antwerp,	429 t.	
Soap—		
Antwerp,		5 cs.
Ghent,		1

GRIMSBY.

Week ending May 11th.

Chemicals (otherwise undescribed)		
Dieppe,	7 cks.	
Hamburg,		7 cs. 4 btls.
Rotterdam,	3	
Coal Products (otherwise undescribed)		
Dieppe,	164 cks.	1 cs.
Colours—		
Antwerp,	4 cks.	1 dm.
Dieppe,	1	
Manure—		
Malmo,		2 cks.
Pitch—		
Antwerp,	79 t.	
Soap—		
Antwerp,		1 cs.

Calcutta, 20 dms. 2 cks. 680	2 cks. 10 cks.
Ceara, 20	
Constantinople, 20	1 brl.
Copenhagen, 20	
Galatz, 148	
Hamburg, 75	1
Leghorn, 1	
Manaos, 5	
Marseilles, 16	
Melbourne, 40	
Montreal, 1 bx. 20	121 9
17 dms. 40 cks.	
New York, 31	
Para, 1 tce.	25 28
Rio de Janeiro, 2	
St. John's, Nfld., 27 pkgs.	
Valparaiso, 60 cks.	10
Paraffin Scale—	
Havre, 26 cks.	
Paraffin Wax—	
Hari, 20 bgs.	
Para, 5 cks. 25 cks.	
Patras, 15	
Phosphate of Lime—	
New York, 19 c.	£13
Phosphorus—	
Shanghai, 15 c.	£150
Potassium Bichromate—	
Alexandretta, 5 t. 7 c.	£251
Potassium Carbonate—	
Lisbon, 2 t. 12	£50
New York, 2 13 c.	69
Potassium Chlorate—	
Patras, 4 c.	£11
Naples, 15	36
Hioogo, 25 t.	1,053
Antwerp, 2 10	120
Genoa, 4 7	189
New York, 12 15	652
Vera Cruz, 1 4	71
Gothenburg, 2 10	113
St. Petersburg, 10	473
Kiga, 5	284
Rottendam, 16	35
Potassium Prussiate—	
Lisbon, 5 c.	£20
Malaga, 2	10
Salt	
Adelaide, 10 t.	
Antwerp, 240	
Bakana, 35	
Barbadoes, 100	
Boston, 500	
Brax, 12	
B. Ayres, 50	
Calcutta, 2 518	
Cape Town, 51	
Copenhagen, 680	
Degama, 100	
E. London, 8	19 c.
Ghent, 180	
Gd. Bassa, 7	10
Gd. Lahore, 25	
Halifax, 410	19
Hamburg, 100	17
Kingston, Jam, 258	12
Isles de Los, 34	18
Lagos, 80	
Madras, 1,935	
M. Video, 8	10
Montreal, 1,112	
Newport News, 65	
New York, 130	
Noqui, 30	
Norrkoping, 324	
Old Calabar, 330	
Opobo, 134	
Pireus, 16	
Quebec, 20 cks.	
Rio Nunez, 750	
Rosario, 25	
Rottendam, 15	
St. John's, Nfld., 15	
Salt Pond, 49	10
San Francisco, 398	3
Sapeli, 39	
Savannah la Mar, 100	
Sierra Leone, 100	
Sinoe, 34	10
Trinidad, 44	4
Salt Cake—	
Baltimore, 186 t. 7 c.	£262
Saltpetre—	
Santos, 5 t. 4 c.	£15
Hamburg, 2	21
Para, 10	238
Pernambuco, 8	7 3 q. 210
Sheep Dip—	
Calcutta, 18 c.	£20
Rangoon, 11	1 q. 12
B. Ayres, 7 t. 4	195
Slag—	
Nantes, 50 t.	

Soap—	
Accra, 40 bxs.	
Akassa, 54	60 dms.
Algoa Bay, 1,805	
Antigua, 75	720 cks.
Antwerp, 250	
Appam, 200	
Baltimore, 19	
Barbadoes, 1,009	
Batavia, 140	
Bayin, 72	
Bermuda, 50	
Bombay, 670	7
Boston, 2	2 cks.
Calcutta, 2	500 bdl.
Canaria, 235	
Callao, 12	
C. C. Castle, 262	
Cape Town, 450	50
Colon, 350	
Curacao, 117	
Drewin, 50	
Durban, 100	
E. London, 300	85
Genoa, 35	
Gibraltar, 50	
Gd Bassam, 100	
Hamburg, 3	2 figs.
Havre, 490	
Hong Kong, 400	
Lagos, 40	
Lome, 50	
Manaos, 730	
Man la, 1	
M. Video, 1	
Montreal, 750	
New York, 1,550	1
Pelotas, 1	
Ponce, 150	
Pt. Elizabeth, 580	54
Pt. Natal, 850	
Rangoon, 500	17 10 bdl.
Rottendam, 450	
S. John's, Nfld., 175	30
Salt Pond, 610	
San Juan, 300	
Savannah la Mar, 40	
Sapeli, 400	
Shanghai, 5,178	
Sierra Leone, 191	
Singapore, 400	
Smyrna, 20	
Trieste, 1,200	
Trinidad, 500	8
Valparaiso, 5	
Warri, 600	
Winnebuh, 220	
Soda—	
Rangoon, 3 kgs.	
Soda Alkali—	
Barcelona, 50 brls.	
Bombay, 10 cks. 12 dms.	
Genoa, 35	
Leghorn, 10	
Soda Ash—	
Baltimore, 2,719 bgs. 66 cks.	
Bilbao, 7	
Boston, 200	230
Calcutta, 50	
Callao, 20	10
Ceara, 20	
Copenhagen, 1,225	20 brls.
Corfu, 180	
Genoa, 100	
Ghent, 10	
Gothenburg, 100	20
Havana, 2	
Hong Kong, 10	
Lisbon, 42	
M. Video, 20	58
Montreal, 200	35
Newport News, 36	
New York, 88	
Norrkoping, 250	
Philadelphia, 1,034	
Pireus, 10	
Puerto Cabello, 8	
Rottendam, 100	
Soda Crystals—	
Boston, 224 brls.	
Calcutta, 17	31 kgs.
Cape Town, 25	
Constantinople, 50	
Corfu, 20	
Malta, 25	
M. Video, 255	40 cks.
Montreal, 255	100
Philadelphia, 285	33
San Francisco, 200	
Valparaiso, 50	
Sodium Bicarbonate—	
Barbadoes, 100 kgs.	
Bombay, 90	
Calcutta, 210	

Callao, 10 bgs.	
Constantinople, 20	
Dantzig, 148	
Havana, 25	
Kurrachee, 375	5 cks.
Lisbon, 10	
Malta, 20	
M. Video, 50	
Montreal, 160	25 11 brls.
Nantes, 44	
Newfairwater, 30 cks.	
Riga, 109	
Rottendam, 6	
St. Petersburg, 500	
Seville, 80	20 brls.
Sodium Chlorate—	
Boston, 100 kgs.	
Genoa, 20	
Hamburg, 10	3 cks.
Newfairwater, 12	
Vera Cruz, 8	
Sodium Hyposulphite—	
Alexandria, 10 brls.	
Sodium Prussiate—	
Montreal, 2 cks.	
Sodium Silicate—	
Bilbao, 35 brls.	
Sodium Sulphate—	
Lisbon, 2 cks.	
Sulphur—	
Calcutta, 6 t.	£24
Montreal, 1 10 c.	52
Riga, 1 10	55
Copenhagen, 67 19	250
Boston, 300 3	978
Para, 4	34
Superphosphate—	
Las Palmas, 6 t.	£27
Valencia, 19 11 c.	52
Tartaric Acid—	
Callao, 2 c.	£11
Treacle—	
Antwerp, 25 hf-pns.	
Christiania, 25 cks. 5 brls.	
Dantzig, 5	
Gefle, 95	
Hamburg, 10 tcs. 10	
Hernosand, 50	
Norrkoping, 12 t. 9 c. 100	
Rottendam, 5 5 20	
Sundswall, { 185 1 122	
Terneuzen, 33	
Turpentine—	
Calcutta, 204 dms.	
Loanda, 4	
Port au Prince, 5 brls.	
Varnish—	
Accra, 4 dms.	
Barcelona, 3	
Benin, 2 cks.	
Boston, 12	
B. Ayres, 6	
Calcutta, 5	
Genoa, 3 cks.	
Hong Kong, 10	
Ibrail, 4 brls. 50	
Leghorn, 5	3
Lisbon, 3	
M. Video, 5	
Naples, 2	
Oporto, 1	
St. John's, Nfld., 2	
Sierra Leone, 2	
White Lead—	
Bahia, 50 kgs.	
Cabedello, 10	
Cape Town, 120 dms.	
Port au Prince, 4 brls.	
Sierra Leone, 100	
Whiting—	
Barbadoes, 5 cks.	
Corunna, 25 t. 1 c.	
Zinc Oxide—	
Cabedello, 9 c. 3 q. £12	
Zinc White—	
Sierra Leone, 22 kgs.	

Aniline Oil—	
Rottendam, 9 dms. 10 tins	
Rouen, 10	
Bleaching Powder—	
San Sebastian, 27 cks.	
Boiler Composition—	
Copenhagen, 40 cks.	
Carbolic Acid—	
Treport, 298 brls. 5 cks.	
Caustic Soda—	
San Sebastian, 30 dms.	
Rouen, 7	
Chemicals (otherwise undescr)	
Antwerp, 30 kgs.	
Colours—	
Rouen, 2 cks.	
Cresosote—	
Antwerp, 13 cks.	
Logwood—	
Alexandria, 16 bgs.	
Pitch—	
Antwerp, 182 t.	
Treport, qty.	
Sulphuric Acid—	
Rio de Janeiro, 14 cks.	
Tar Oil—	
Rottendam, 30 dms.	
Treport, 50 cks.	
Zinc Chloride—	
Rottendam, 11 cks.	

HULL.

Week ending May 11th.

Ammonium Sulphate—	
Ghent, 100 bgs.	
Odessa, 2	
Benzol—	
Rottendam, 25 cks.	
Bleaching Powder—	
Gothenburg, 4 cks.	
Hango, 3	
Caustic Soda—	
Hango, 22 dms.	
Riga, 202	
Chemicals (otherwise undescr)	
Amsterdam, 20 cks.	
Antwerp, 26 1 cks. 3 qts.	
Copenhagen, 9	
Constantinople, 200	
Christiania, 5	
Drontheim, 178 dms. 5	4 bds
Gothenburg, 5 cks. 2	5 pks
Hamburg, 61	10
New York, 25	
Odessa, 250	
Riga, 250	
Rottendam, 116 5	1 kg.
Reval, 24	
Stockholm, 6 8	
Cottonseed Oil—	
Antwerp, 1 162 c.	
Bremen, 184	
Bergen, 48	
Copenhagen, 70	
Constantinople, 25	
Christiania, 231	
Gefle, 100	
Gothenburg, 218	
Hamburg, 4,102	
Konigsberg, 134	
Rottendam, 4,921	
Stettin, 740	
Stockholm, 1,550	
Dyestuffs (otherwise undescr)	
Christiania, 12 bgs.	
Dunkirk, 1 cks.	
New York, 10 20 cks. 15 dms.	
Riga, 1	
Linseed Oil—	
Bergen, 25 c.	
Christiania, 583	
Christiansund, 55	
Drontheim, 220	
Hamburg, 446	
Rottendam, 257	
Mineral White—	
Amsterdam, 20 t.	
Ochre—	
Bremen, 5 cks.	
Hamburg, 3	
Painters' Colours—	
Amsterdam, 2 pkgs.	
Antwerp, 30 cks.	
Bremen, 1	
Copenhagen, 54	
Christiania, 50 pks. 1 cks. 8	

MANCHESTER.

Week ending May 15th.

Alum—	
Rouen, 5 cks.	
Ammonium Carbonate—	
Copenhagen, 10 kgs.	
Aniline Colours—	
Rottendam, 2 brls.	
Aniline Dyes—	
Rouen, 1 kg.	

Amsterdam,	2 cks.	
Antwerp,	10	1
Bombay,	16	10
Calcutta,	7	7
Canton,	15	1
Cebu,	54	5
Colon,	14	
Hankow,	6	
Hongkong,	15	3 pcks. 4
Manila,	41	
Medan,	2	
Penang,	11	21 pks.
Peking,	41	20
Shanghai,	2	15
Singapore,	2	
Sourabaya,	2	
Tientsin,	2	
Yokohama,	2	
Amsterdam,	2 bgs.	
Antwerp,	404 t.	
Bombay,	15	
Calcutta,	50 cks.	
Canton,	85	
Cebu,		
Colon,		
Hankow,	2 cs.	
Hongkong,	26 cks.	
Manila,	31	
Medan,		
Peking,	10 cks.	
Shanghai,	1	
Singapore,	15	
Sourabaya,	2	
Tientsin,	3	
Yokohama,	3	
Amsterdam,	3 bris.	
Antwerp,	6 cks.	
Bombay,	2 cs.	
Calcutta,	1	
Canton,	2	
Cebu,	3	
Colon,	5	
Hankow,	1	
Hongkong,	2 cns.	

GLASGOW.

Week ending May 16th.

Ammonium Sulphate—	
Amsterdam,	113 t. 11 c.
Antwerp,	151
Bombay,	10
Calcutta,	60
Canton,	13
Cebu,	
Colon,	
Hankow,	
Hongkong,	
Manila,	
Medan,	
Peking,	
Shanghai,	
Singapore,	
Sourabaya,	
Tientsin,	
Yokohama,	
Ammonium Sulphate—	
Amsterdam,	113 t. 11 c.
Antwerp,	151
Bombay,	10
Calcutta,	60
Canton,	13
Cebu,	
Colon,	
Hankow,	
Hongkong,	
Manila,	
Medan,	
Peking,	
Shanghai,	
Singapore,	
Sourabaya,	
Tientsin,	
Yokohama,	

N. Zealand,	77
Victoria,	58
Canada,	253
Fustic Extract—	
Montreal,	£137
Indigo—	
Montreal,	£134
Logwood—	
Dunedin,	£159
Pt. Lyttelton,	27
Montreal,	44
Madder—	
Montreal,	£53
Sumac Extract—	
Montreal,	£35
Dyestuffs (otherwise undescribed)—	
Montreal,	£40
Gelatine—	
Dunedin,	£24. 10s.
U.S.A.,	£1,042
Linseed Oil—	
Dunedin,	4 t. 3 1/2 c.
Gisborne,	1
Invercargill,	1
Napier,	4
Sydney,	6
Wellington,	1
Adelaide,	6
Melbourne,	4
Cape Town,	1
Manila,	8
Singapore,	1
Ilo Ilo,	3
Litharge—	
Montreal,	£20
Oporto,	29
Magnesium Chloride—	
Saigon,	£25
Magnesium Silicate—	
Saigon,	£30
Magnesium Sulphate—	
Sydney,	£20
Manganese—	
Rotterdam,	3 t. 5 c.
Manure—	
Trinidad,	111 t. 18 c.
Paint—	
Dunedin,	£241
Kingston Jam.,	114
Sydney,	171
Bangkok,	150
Calcutta,	310
Singapore,	30
Colombo,	95
Manila,	290
Philippine Is.,	210
Rangoon,	123
Painters' Colours—	
Invercargill,	£54
Montreal,	103
Sydney,	125
Calcutta,	30
Manila,	70
Saigon,	179
Paraffin Wax—	
Bordeaux,	1 t. 7 1/2 c.
Christiania,	5
Auckland,	£410
Bari,	34
Tries e,	46
Venice,	23
Yokohama,	2
Antwerp,	62
Potassium Bichromate—	
U.S.A.,	£1,137
Amsterdam,	200
Rotterdam,	396
Stockholm,	132
Antwerp,	93
Genoa,	199
Hioho,	3,158
U.S.A.,	
Potassium Prussiate—	
U.S.A.,	8 t. 19 1/2 c.
Rosin Oil—	
Amsterdam,	£47
Soap—	
Grenada,	5 t. 14 1/2 c.
Soda Ash—	
U.S.A.,	£57
Sodium Bichromate—	
Montreal,	£81
U.S.A.,	549
Antwerp,	152
Canada,	114
Genoa,	90
Leghorn,	
Sodium Phosphate—	
U.S.A.,	£57
Superphosphate—	
Auckland,	10 t.

Tallow—	
Oporto,	1 t. 1 c.
Treacle—	
Christiania,	25 t. 9 1/2 c.
Helsingborg,	
Stockholm,	29
Turpentine—	
Manila,	£119
Philippine Is.,	52
Varnish—	
Sydney,	£31
Bangkok,	21
Calcutta,	35
Manila,	153
White Lead—	
Calcutta,	£45
Canterbury,	110
Dunedin,	180
Sydney,	25
Melbourne,	40
Singapore,	27
Hong Kong,	73

TYNE.

Week ending May 11th.

Alkali—	
Hamburg,	16 t. 8 c.
Amsterdam,	19
Rotterdam,	8
Riga,	16
Alum Earth—	
Copenhagen,	5 t. 4 c.
Ammonia Alkali—	
Odense,	30 t.
Ammonium Carbonate—	
Seville,	11 c.
Antimony—	
Antwerp,	1 t.
Hamburg,	2
Montreal,	4
Rotterdam,	5
Arsenic—	
Antwerp,	5 t. 7 c.
Gothenburg,	1
Leghorn,	10
Barium Binoxide—	
Rouen,	10 t.
Barium Carbonate—	
Cologne,	184 t.
Basic Slag—	
Bergen,	4 t.
Blanc Fixe—	
Montreal,	5 t.
Bleaching Powder—	
Frederica,	1 t.
Antwerp,	60
Hamburg,	59
Amsterdam,	9
Christiania,	1
Rouen,	10
Copenhagen,	5
Helsingborg,	9
Abo,	11
Rotterdam,	17
Drontheim,	9
San Francisco,	50
Lisbon,	4
Gothenburg,	4
Bergen,	5
Carbolic Acid—	
Rotterdam,	8 t. 14 c.
Caustic Soda—	
Antwerp,	11 t.
Hamburg,	27
Amsterdam,	3
Montreal,	29
San Francisco,	101
Helsingborg,	77
Abo,	56
Wyborg,	4
Rotterdam,	1
Genoa,	119
Gothenburg,	5
China Clay—	
San Francisco,	23 t. 4 c.
Glue—	
Bergen,	6 c.
Linseed Oil—	
Montreal,	5 t. 3 c.
Litharge—	
Hamburg,	1 t. 11 c.
Amsterdam,	2
Copenhagen,	1
Genoa,	1
Lisbon,	7
Gothenburg,	1
Montreal,	58
Magnesia—	
Hamburg,	1 q.

Barcelona,	8 t. 10 c.
Montreal,	1
Rouen,	5
Lisbon,	1
Magnesium Sulphate—	
Seville,	3 t. 5 c.
Oxalic Acid—	
Seville,	6 c.
Paint—	
Antwerp,	1 t. 15 c.
Hamburg,	29
Trieste,	2
Helsingborg,	10
Bergen,	7
Phosphorus—	
Barcelona,	16 c.
Seville,	1 t. 9
Soap—	
Copenhagen,	5 c.
Soda—	
Frederica,	30 t. 2 c.
Antwerp,	5
Amsterdam,	30
Christiania,	5
Randers,	28
Helsingborg,	9
Abo,	12
Hango,	11
Rotterdam,	27
Odense,	12
Drontheim,	7
Bergen,	4
Aalborg,	5
Soda Ash—	
Christiania,	13 t.
Helsingborg,	110
Sodium Silicate—	
Helsingborg,	5 t. 2 c.
Genoa,	5
Sulphur—	
Helsingborg,	3 c.
Tar—	
Libau,	10 t. 8 c.
White Lead—	
Hamburg,	4 c.
Montreal,	73 t. 3
Helsingborg,	10

GOOLE.

Week ending May 8th.

Benzol—	
Hamburg,	48 cks.
Rotterdam,	50
Chemicals (otherwise undescribed)—	
Boulogne,	1 ck.
Ghent,	25 pcks.
Hamburg,	22
Rotterdam,	5 cs.
Coal Products (otherwise undescribed)—	
Antwerp,	12 cks.
Boulogne,	66
Dunkirk,	66 bgs.
Ghent,	1
Hamburg,	7
Rotterdam,	7
Colours—	
Ghent,	1 cs.
Dyestuffs (otherwise undescribed)—	
Hamburg,	28 cks.
Rotterdam,	1
Manure—	
Ghent,	300 bgs.
Ostend,	328
Pitch—	
Antwerp,	49 t.
Soap—	
Antwerp,	5 cs.
Ghent,	1

GRIMSBY.

Week ending May 11th.

Chemicals (otherwise undescribed)—	
Dieppe,	7 cks.
Hamburg,	7 cs. 4 bts.
Rotterdam,	3
Coal Products (otherwise undescribed)—	
Dieppe,	164 cks. 1 cs.
Colours—	
Antwerp,	4 cks. 1 dm.
Dieppe,	1
Manure—	
Malmo,	2 cks.
Pitch—	
Antwerp,	70 t.
Soap—	
Antwerp,	1 cs.

PRICES CURRENT.

WEDNESDAY, MAY 22ND, 1894.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

Acids:—

	£	s.	d.
Acetic, 25% and 40%	per cwt.	6/3	9/3
Glacial	"	40/-	
Arsenic S.G., 2000°	"	0	15 0
Fluoric	per lb.	0	0 3/4
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0 10
(Cylinder), 30° Tw.	"	0	3 0
Nitric 80° Tw.	per lb.	0	0 1 1/2
Nitrous	"	0	0 1 1/4
Oxalic	nett	0	0 3 1/4
Phosphoric, 1750°	"	0	1 1
Picric	"	0	0 10
Sulphuric (fuming 50%)	per ton	15	10 0
(monohydrate)	"	5	10 0
(Pyrites, 168°)	"	3	0 0
(free from arsenic, 145°)	"	1	5 0
Sulphurous (solution) S.G. 1025	"	3	0 0
Tannic (pure)	per lb.	0	1 0
Tartaric	"	0	0 10 3/4
Arsenic, white powdered	nett per ton	14	15 0
Alum (loose lump)	"	4	12 6
Alumina Sulphate (pure)	"	4	12 6
Aluminoferic	"	2	7 6
Aluminium	per lb.	0	2 10
Ammonia, Anhydrous	"	0	1 3
" 880=28° B.	per lb.	0	0 3
" =24° B.	"	0	0 2 1/4
" Carbonate	nett	0	0 3 1/4
" Muriate	per ton	21	10 0
" (sal-ammoniac) 1st & 2nd	per cwt.	39/-	37/-
" Nitrate	per ton	40	0 0
" Phosphate	per lb.	0	0 8 1/2
" Sulphate (grey) London	per ton	9	12 6
" (grey) Hull	"	9	12 6
Aniline Oil (pure)	per lb.	0	0 5 1/4
Aniline Salt	"	0	0 4 1/2
Antimony	per ton	31	15 0
" (tartar emetic)	per lb.	0	0 7
" (golden sulphide)	"	0	0 10
Barium Chloride	per ton	6	7 0
" Carbonate (native)	"	3	5 0
" Sulphate (native levigated)	"	45/-	75/-
Bleaching Powder, 35%	nett	7	0 0
" Liquor, 7%	"	3	10 0
Bisulphide of Carbon	"	13	0 0
Chromium Acetate (crystal)	per lb.	0	0 6
Calcium Chloride	per ton	2	2 6
China Clay (at Runcorn) in bulk	"	15/-	30/-

Coal Tar Products and Dyes:—

Alizarine (artificial) 20%	nett per lb.	0	0 8
Magenta	"	0	3 9
Anthracene, 30% A, f.o.b. London	per unit per cwt.	0	1 0
Benzol, 90% nominal	per gallon	0	1 0
50/90	"	0	1 0
Carbolic Acid (crystallised 40°)	per lb.	0	0 6 1/4
(crude 60°)	per gallon	0	1 8 1/2
Creosote (ordinary)	"	0	0 1 1/4
(filtered for Lucigen light)	"	0	0 2
Crude Naphtha 30% @ 120° C.	"	0	0 5
Grease Oils, 22° Tw.	per ton	2	10 0
Pitch, f.o.b. Liverpool or Garston	"	1	13 0
Solvent Naphtha, 90% at 160°	per gallon	0	1 1
Lucigen and "Wells" Oils	"	0	0 2 1/2
Copper	per ton	43	2 6
" Sulphate	"	15	15 0
" Oxide (copper scales)	"	41	10 0
Glycerine (crude)	"	16	10 0
(distilled S.G. 1250°)	"	42	10 0
Iodine	nett, per oz.	0	0 9
Iron Sulphate (copperas)	per ton	1	5 0
" Sulphide (antimony slag)	"	2	0 0
Lead (sheet) for cash	"	11	12 6
" Litharge Flake (ex ship)	"	13	5 0
" Acetate (white)	"	24	10 0
" brown	"	14	10 0
" Carbonate (white lead) pure	"	16	0 0
Nitrate	"	18	15 0

Lime, Acetate (brown)	per ton	5	12 6
" (grey)	"	8	10 0
Magnesium (ribbon and wire)	per oz.	0	2 0
" Chloride (ex ship)	per ton	2	7 6
" Carbonate	per cwt.	1	17 6
" Hydrate	per ton	17	0 0
" Sulphate (Epsom Salts)	per ton	3	0 0
Manganese, Sulphate	"	17	0 0
" Borate	per cwt.	2	15 0
" Ore, 70%	per ton	4	5 0
Methylated Spirit, 61° O.P.	per gallon	0	1 10
Naphtha (Wood), Solvent	"	0	3 0
" Miscible, 60° O.P.	"	0	3 0

Oils:—			
Cotton-seed	per ton	18	10 0
Linseed	"	21	10 0
Petroleum, American	per gallon	0	0 6 1/2
Stearine	per ton	25	10 0
Phosphorus (yellow)	per lb.	0	0 1
(red)	"	0	2 8
Potassium (metal)	per oz.	0	3 7
" Bichromate	nett per lb.	0	0 4 1/2
" Carbonate, 90% (ex ship)	per ton	16	15 0
" Chlorate	per lb.	0	0 5
" Cyanide, 98%	"	0	1 0
" Hydrate (Caustic Potash) 80/85%	per ton	21	5 0
" (Caustic Potash) 75/80%	"	19	15 0
" (Caustic Potash) 70/75%	"	19	10 0
" Nitrate (refined)	per cwt.	1	1 6
" Permanganate	per cwt.	2	17 6
" Prussiate Yellow	per lb.	0	0 7 1/2
" Sulphate, 90% (ex ship)	per ton	9	15 0
" Muriate, 80% (do.)	"	8	10 0
Silver (metal)	per oz.	0	2 1/2
" Nitrate	"	0	2 0
Sodium (metal)	per lb.	0	2 11
" Carb. (refined Soda-ash) 48%	nett per ton	4	15 0
" (Caustic Soda-ash) 48%	"	4	0 0
" (Carb. Soda-ash) 48%	"	3	15 0
" (Alkali) 58%	"	3	7 6
" (Soda Crystals)	"	3	2 6
" Acetate (ex-ship)	"	14	0 0
" Arseniate, 45%	"	11	0 0
" Chlorate	per lb.	0	0 4 1/2
" Borate (Borax)	nett, per ton	18	0 0
" Bichromate	per lb.	0	0 1 1/2
" Hydrate (77% Caustic Soda) (f.o.b.) net pr. ton	ton lots	9	7 6
" (74% Caustic Soda)	"	8	7 6
" (70% Caustic Soda)	"	7	10 0
" (60% Caustic Soda)	"	6	10 0
" (60% Caustic Soda, cream) (f.o.b.)	"	6	7 6
" Bicarbonate	"	6	10 0
" Hyposulphite	"	5	10 0
" Manganate, 30%	"	16	0 0
" Nitrate (95% ex-ship Liverpool)	per cwt.	0	8 1/2
" Nitrite, 98%	per ton	29	0 0
" Phosphate	"	4	10 0
" Silicate (glass)	per ton	4	10 0
" (liquid, 100° Tw.)	"	3	10 0
" Stannate, 40%	per cwt.	3	2 8
" Sulphate (Salt-cake)	per ton	0	17 8
" (Glauber's Salts)	"	1	3 0
" Sulphide	"	8	0 0
" Sulphite	"	5	5 0
Strontium Hydrate, 100%	"	8	10 0
Sulphocyanide Ammonium, 95%	per lb.	0	0 6 1/2
" Barium, 95%	"	0	0 4 1/2
" Potassium	"	0	0 7
Sulphur (Flowers)	per ton	5	15 0
" (Roll Brimstone)	"	5	0 0
" Brimstone: Best Quality	"	3	12 6
Superphosphate of Lime (26%)	"	2	7 6
Tallow	"	23	10 0
Tin Crystals	per lb.	0	0 5 1/2
" English Ingots	per ton	70	0 0
Zinc (Spelter)	"	14	15 0
" Chloride (solution, 100° Tw.)	"	5	7 6

THE CHEMICAL TRADE JOURNAL

AND
OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

419,

SATURDAY, JUNE 1, 1895.

Vol. XVI.

Contents.

PAGE	PAGE
Topics	349
Companies	350
Ligence	351
s in the Cheshire Salt	351
Irwell Joint Committee	352
Chemical Industry	352
ation of Ramie	353
orth on the Nitrate Com-	353
Shelf	354
ary Jottings	354
aders	354
ts	355
Manure Material	355
Tar and Ammonia Products	356
Miscellaneous Chemical Market	356
Liverpool Oil and Colour Market	356
Liverpool Mineral Market	356
The Metal Market	356
West of Scotland Chemicals	356
Hull Paint, Oil, and Colour Report	357
Tyre Chemical Report	357
New Companies	357
The Patent List	357
Gazette Notices	357
Imports	357
Exports	360
Prices Current	364

ADVERTISEMENTS.

TENDER.

LONGWOOD GAS COMPANY.

TAR AND AMMONIACAL LIQUOR.

Directors of the above Company are prepared to receive TENDERS for the purchase of the surplus Tar and Ammoniacal at their Works during the year ending June 30th, 1896, or ton for Liquor per degree at 5° and 6° Twaddel. The estimated disposal is about 1,000 tons.

sealed and endorsed, to be sent in not later than Tuesday, June 18th, to EDWARD ARMITAGE, Esq., J.P., Chairman Longwood Gas Works, Huddersfield.

JOHN L. MITTON,
Manager and Secretary.

TENDER.

TAR.

Directors of the Reading Gas Company invite TENDERS for the purchase of their surplus Tar for one year, commencing of July next.

Conditions for the Contract will be forwarded on application.

Communication direct to the Works.

Endorsed "Tender for Tar," must be delivered not later than Monday, June, to

Met Place, Reading,
5 May, 1895.

ARTHUR H. CANE,
Secretary.

Notices.

Communications for the *Chemical Trade Journal* should be sent to the Editor, and Cheques and Post Office Orders made payable to—
VIS BROS., 32, Blackfriars Street, MANCHESTER.

Our Registered Telegraphic Address is—
"Expert, Manchester."

Advertisements.

Advertisements of Situations Vacant, Premises on Sale or To be Let, and Specific Articles for Sale by Private Contract are charged at the *Chemical Trade Journal* at the following rates:—

10 Words and under..... 2s. 6d. per insertion
Each additional 10 words..... 6s. 6d. "

Advertisements, Announcements in the Directory Columns, and all Advertisements not prepaid, are charged at the Tariff rates, which will be forwarded on application.

CURRENT TOPICS.

THE PHILANTHROPIST UNMASKED.

ONE of the most catching arguments raised by the supporters of the Standard Oil Company in connection with the recent controversy on the flash-point of oils was the inevitable raising of the cost to the poor consumers. This argument not unnaturally proved a popular one, and was all the more potent on account of the comparative difficulty of adducing a definite refutation. Indirect evidence, however, was by no means wanting. How true were the indirect answers given to this argument the recent boom in petroleum has very clearly shown. Apart from the justness of fractionally increasing the cost of the oil in return for a great increase in the safety, how have those who were so unwilling to put a trivial burden on the consumer recently treated the very class they pretended to protect? There is no need for any details, the market price of petroleum speaks for itself. Nor is there any lack of evidence to show the extreme falseness of the philanthropy of the Standard partisans. The present prices are not likely to be here to-day and gone to-morrow, as some would have us think. The prospect of an unofficial arrangement between the American and Baku producers is too promising to be pleasant, while one of the most influential oilmen in this country, when discussing the chances of oil returning to its former price, did not hesitate to give his positive opinion that never again would oil be obtainable at the old low figures.

Nor has the difficulty of price been confined to petroleum, for, mainly through the same agency, the price of candles has been advanced also, and in this wise: Had the Standard not bribed the Scotch producers to drop the flash-point question by promising to effect a combination to advance the price of solid paraffin, the candle-makers would not have combined to balance the increased cost of the raw material by a corresponding advance in the price of the finished article.

Thus those who clamoured against the bare possibility of taxing in the minutest degree that portion of the community which depends solely on oil or candles as a source of light, and oftentimes heat, have not scrupled for the attainment of their own selfish ends to ultimately force oil to a well nigh prohibitory price, and materially advance the other commodity. This injustice is still further aggravated by the fact that the oil, which now has to be paid for through the nose, is the same dangerous relation of naphtha which the Standard could afford to retail a few months ago at 4d. per gallon.

Under these circumstances we feel that if the public safety is to receive such scanty consideration, the public should at least demand that the oil of 73° flash point, which is considered safe enough for general use, should also be used wholly and solely in all Government departments, whether in connection with the Army or the Navy. If the cheap (?)

75° oil is good enough for the ignorant public, it is plenty good enough for the all-wise servants of the Government, and long and strong is the protest that should be made against any expenditure, incurred in procuring high flash oil for the peculiar use of the Government.

CINDERS AND SEWAGE.

The Mersey and Irwell Joint Committee were disposed to plume themselves at their last meeting on the improvement of the rivers. It was stated that there was a decided improvement at Warrington. We have heard the same statement in that very town, and from all accounts there has been a change for the better. We fear, however, that this news does not afford much proof that the pollution in the upper reaches is being materially lessened. Whatever the state of the water may be at Warrington, the Irwell retains its accustomed hue, which fact only seems to confirm our early belief that the docks and locks of the Ship Canal would constitute excellent settling tanks and aerators for the sewage that is constantly being fed into them.

With regard to cinders, even if the dredging in the Canal shows an improvement, the recent dredging that has been carried out between Hunt's Bank and Pomona tells a different tale. The special report on this source of pollution, which we understand the Chief Inspector is to prepare, should be most instructive, seeing that there appears to be a divided opinion about the extent to which the cinder tipping nuisance has been abated.

GERMAN CHEMISTS.

This month the annual meeting of the German Society of Applied Chemistry is to be held at Frankfurt-a-Maine, from the 9th to the 12th inst. The programme of the meeting appears to be a good one. On Monday, 10th, the general meeting is to be held in the Zoological Gardens, followed in the afternoon by a sitting at which the chief business of the society will be accomplished. The evening will be devoted to a banquet. On the Tuesday there will be a further sitting, and in the afternoon arrangements have been made for visiting various works. One of the most important of these visits will be that made to the Electrolytic Separation Works of the Deutsche Gold und Silber Scheide Anstalt. Visits to the Electric Power Generation and Distribution Station at Bockenheim, the Biebrich Cement Works, and the physical and electrolytic laboratories at the Darmstadt University are also optional alternatives. The last day is to be devoted to a breaking-up party in the Niederwald, to which ladies are invited; so that, one way and another, there is every promise of a pleasant and successful meeting.

ASPATRIA AGRICULTURAL COLLEGE.—The successes achieved by the students of this college have this year been capped by Mr. G. Hurley, who in the recent senior examination of the Royal Agricultural Society of England gained the gold medal awarded to the competitor holding the first place, providing that he reached 75 per cent. of the total marks obtainable. It is the more creditable since for the first time the extra awards given to the successful competitors have this year been limited to five, viz., one gold medal and four silver medals, with life membership of the R.A.S.E. The gold medal carries with it the title of "Gold Medallist of the R.A.S.E.," and the college has the proud distinction of turning out the first gold medallist of the society. In an open competition in which Cirencester, Downton, and other well-known agricultural institutions compete for the coveted honour of first place, it reflects to the credit of this hard-working college that one of their number has attained the highest possible position in the most important agricultural examination in England. Mr. Hurley is not quite eighteen years of age, and holds a scholarship under the Staffordshire County Council at the Aspatria College. At the same examination, Mr. R. Brinsmead gained a first-class certificate, which in former years would have entitled him to the life membership also.—*Mark Lane Express.*

Reports of Companies.

THE SAN DONATA NITRATE COMPANY, LIMITED

The sixth annual meeting of the shareholders of the San Donata Nitrate Company, Limited, was held recently at the Law Association Rooms, Cook-street, Liverpool, Mr. John Waite, presiding in the absence of Mr. R. Harvey, the chairman of the company. The report on accounts for the twelve months ending the 31st of December last showed that the profit and loss account, after writing off a sum of £2,820 4s 9d. for depreciation, amounted to £21,972 18s. 6d. which, adding balance from last account, £18,178 16s. 2d., to amount carried to reserve fund, £10,000, made a total at the credit of profit and loss account of £30,151 14s. 6d. Of this the directors propose to place to reserve fund an additional sum of £9,000, write off for depreciation a further £5,000, and to pay a dividend of the year of 2½ per cent., absorbing £4,000, carrying forward to next account (pending the settlement of the claim against the Chilean Government for 80,344 50 dollars in respect of loss by fire) £12,151 14s. 8d.

In moving the adoption of the report the chairman said that he was sure the shareholders would be pleased to see that the company had done better this year than ever owing to the exceptionally good year for nitrate, the profits amounting to £21,972 18s. 6d., against £10,000 for 1893. The directors recommended a dividend, to be paid on May 31st, of 2½ per cent., on the paid-up capital of the company. He was of opinion that very few *oficinas* in South America were making nitrate cheaper than this company. All that was wanted now was good prices for the nitrate to enable sales to be made at good profit. With regard to the claim on the Chilean Government they had been prosecuting it month after month, but up to the present time they had not been able to recover it, but they still hoped to get the whole or part of it.

Mr. R. R. Lockett seconded the adoption of the report and accounts and the motion was carried.

The retiring director, Mr. John Waite, was re-elected; and the auditors, Messrs. Harwood Banner and Son, were re-appointed.

A hearty vote of thanks was accorded to the employees on the coast and also to the Chairman for presiding.

MESSRS. J. C. & J. FIELD, LTD.

The directors report that a considerable improvement in the position has been made during the year as compared with the preceding year and that although depression of trade and excessive competition had again adversely affected the company, yet, owing in great measure to the economies introduced by the board, the profits, after providing for repairs and depreciation of plant and machinery, amount to £17,955 4d., as against £11,777 0s. 9d. in 1894. After deducting interest paid and accrued on the debentures, managing directors' salaries, directors', trustees', and auditor's fees, and expenses of secretary's department, there remains a net profit of £13,972 5s. 10d., to which has to be added £263 8s. 7d. brought forward from the last account, making a disposable balance of £14,235 14s. 5d., which is proposed to deal with as follows:—(1) To pay a dividend of 11½ per cent., being 7 per cent. for the year and the arrears in full on the 7½ per cent. preference shares, and 6 per cent. and arrears in full on the 6½ per cent. preference shares; (2) to pay 2½ per cent. on the ordinary shares, free of income-tax; (3) to place £1,500. to reserve fund; (4) to carry forward £576 19s. 2d. to next account.

NOBEL DYNAMITE TRUST, LTD.

The net profit for the year amounts to £174,678 2s. 7d., and added the sum of £14,927 17s. 11d. brought forward from last account, there is a total available profit of £189,606 0s. 6d. The directors recommend that £175,397 be applied in payment of a dividend at the rate of 10 per cent. (free of income-tax), carrying forward £14,209 0s. 6d. to next account. The directors state that during the past year the business of the companies has been, on the whole, satisfactory, and that the volume of sales shows an increase.

MESSRS. G. KYNOCH & CO., LTD.

The directors have resolved, subject to the final audit of the accounts, to recommend for the financial year ended on April 5th payment of a dividend at the rate of 10½ per cent. per annum on the preference shares (thus extinguishing the arrears of dividend due on these shares), and a dividend at the rate of 7 per cent. per annum on the ordinary shares, both free of income-tax.

DIVIDEND.

Anglo-Chilian Nitrate and Railway.—The directors recommend payment of one year's arrears of dividend on the preference shares at the rate of 7 per cent. per annum.

MERSEY AND IRWELL JOINT COMMITTEE.

A MEETING of this Committee was held in the Boardroom, Mosley street, on Monday; Mr. Alderman Thompson in the chair.

THE APPEAL AGAINST THE SALFORD CORPORATION.

Mr. T. W. Killick, in moving that the judgment of the Court of Appeal in the action of the Committee against the Salford Corporation should be printed for the information of members, said he had read the case at length and also the judgment, and he thought the way in which the case of the Joint Committee was presented to the Court reflected the highest credit on the Committee's officers, and especially on the Clerk. (Hear, hear.) They were all indebted to Mr. Hulton for the ability with which the case was prepared. The motion was adopted.

OFFENDING LOCAL AUTHORITIES AND FIRMS.

On the proposition of Mr. Killick (chairman of the Consulting Sub-Committee), it was resolved to take proceedings against the Rural District Councils of Bolton and Limehurst, the Whitefield Urban District Council, and the Hyde Corporation. The Clerk was instructed to inform the Macclesfield Corporation that any application made by them for a further suspension of the order of the Court against them would be opposed. With regard to the pollution at Tintwistle, consideration of the position of the Rural District Council was adjourned. It was decided to bring further pressure to bear upon the Macclesfield Rural District Council, the Bollington Urban District Council, the authorities at Ashton-in-Makerfield, and the Bowdon Local Authority. The Clerk was also, on Mr. Killick's proposition, instructed to write to the Corporation of Manchester calling their attention to the bad condition of their effluent, which had become worse since last reported upon, and informing them that if the effluent was not improved the Committee would be compelled to take proceedings.

Mr. John Brierley (chairman of the Chemical Sub-Committee) submitted the report of that Sub-Committee, and on their recommendation it was resolved to give further consideration to the position of the following firms:—George Andrew and Sons, Compstall; S. Walsh and Co., J. Schofield and Sons, Littleborough; Ashworth and Smith, F. Birmer and Co., S. Schwabe and Co., A. Barlow, Blair and Sumner, and the Kinder Printing Co. The Chief Inspector reported that the works of the Littleborough Dyeing Co. were now satisfactory. The Clerk was instructed to write to A. D. Smith (John Walton), Manchester, Glossop, informing him that the Committee were dissatisfied with the slow progress he was making with the construction of works for dealing with the effluent. It was resolved to invite Messrs. Melland and Coward to appear before the next meeting of the Committee and show cause why proceedings should not be taken against them for polluting the river. The Committee received further reports with reference to the cases of Sykes and Co., Edgeley; the Reddisher Bleaching and Finishing Company; D. Crawford and Co.; H. Milner and Co., Penfoldbury; and J. H. Walton, Great Heaton.

THE STATE OF THE IRWELL.

Mr. Tutton (chief inspector) replying to a member of the Committee, said there had been a great improvement in the Irwell and the Ship Canal, so far as pollution by cinders was concerned. The dredging in the Canal showed that not nearly so much cinder rubbish was thrown into the river now as was formerly the case.

The Chairman remarked that the complaints recently made with regard to the throwing of cinders into the Irwell had probably arisen in consequence of the dredgers having disturbed an old accumulation in the bed of the river.

Mr. Alderman Walton Smith stated that a large amount of cinders had been taken up during some building operations that had been going on at the river opposite the Cathedral. He moved that the chief inspector should be requested to make a special report on the subject of this source of pollution.

The Chairman said he was told on good authority there had been an undoubted improvement in the water that passed through Warrington. Mr. Brierley said the cinder nuisance had practically stopped. The motion was adopted. This concluded the business.

RUMOURD COMBINE OF ELECTROLYTIC PROCESSES.—As several of the electrolytic soda and chlorine processes are specially adaptable in various ways, there is a rumour that a United Electrolytic Processes Company is to be formed, which will aim at utilizing each process in the field for which it is best suited.

THE FATAL FIRE AT CANNING TOWN.—Mr. Lewis resumed last week, at Canning Town, the inquest on the five victims of the fire in April. Owing to rumours that the children had been drugged the Coroner had ordered the contents of the stomachs to be analysed, and the result showed that no drugs had been administered. The jury returned a verdict of accidental death in all the cases.

SOCIETY OF CHEMICAL INDUSTRY.

NOTTINGHAM SECTION.

THE activity of a man is not to be measured by his size, and similarly the comparative smallness of the Nottingham Section of the above Society is not to be taken as a measure of its desire to be useful to the general body. It is true that the number of papers read might be greater, but this circumstance has not prevented the meeting of the section from being a distinct success under the genial and judicious chairmanship of Mr. J. M. C. Paton. When papers were not forthcoming an invitation to discuss questions of technical interest without the formality of a preliminary essay has brought the members together, and thus kept the ball rolling. Spread as the members are over a wide area, Mr. Paton, to crown his previous endeavours, arranged for the last meeting of the session, before his retirement, to be held in Derby as the most central place of assembly. Quite half the members of the section sat down to the ample meal designated by the modest name of "tea," on the invitation card sent by the chairman to every member of the section, and which preceded the meeting at the Midland Hotel, on May 22nd. There were no speeches made at the table, so that as the members filed off to the meeting room a feeling seemed to prevail of "not having done those things that we ought to have done." Dr. Clowes, however, who may be trusted for not omitting anything that courtesy demands, arose at the earliest opportunity. Dr. Clowes referred to the diffidence with which Mr. Paton had accepted office, and contrasted it with the eminent success that he attended his efforts. The speaker, continuing, said that as this was the last meeting of the session it would only be fitting to pass a vote of thanks to the retiring chairman for the valuable services that he had rendered to the society during the last two years. He had not been absent from a single meeting. The section must congratulate itself on having had at their head the representative of such a great firm of chemical engineers as Messrs. Manlove, Alliott, & Co., and Dr. Clowes had great pleasure in moving that the best thanks of the meeting be given to Mr. Paton, not only for his services as chairman, but also for the social features that he had introduced into the meetings. His hospitality deserved recognition. Mr. Carulla seconded the motion, observing that Dr. Clowes might be considered to have voiced the feeling of the Nottingham members, as he would venture to speak for those who belonged to Derby. It was frequently said that there was some kind of antagonism between the two towns, but this was not to be found amongst the Nottingham contingent of this section, whose aim seemed to be to distribute the favours as generously as possible, two chairmen having already been chosen from Derby. The action of Mr. Paton in holding this meeting in Derby went still further to prove his desire of extending the influence of the society as widely as possible. Mr. Whiteley supported the motion, expressing the pleasure that he, as hon. secretary of the section, had had in working with Mr. Paton. The vote was carried with acclamation, and the chairman, in acknowledging it, said that he felt gratified if his services had been of any value. He was pleased to see so large a muster. He had thought that as many of the members resided at Burton, Derby as a half-way house, might, as had turned out, be a good place for a meeting.

The meeting was not yet ripe for the papers that were down to reading, as the recent appointment of Mr. R. L. Whiteley to the post of principal of the West Bromwich Institute has compelled him to resign the office of hon. secretary of the section, which he has held for the last five years, and this was a matter that everyone is required to be taken notice of. Mr. Archbutt, in proposing a vote of thanks, said that having, when chairman of the section, worked with Mr. Whiteley, he knew from close experience how much had fallen on Mr. Whiteley's shoulders, and how hard he had worked during the many years he held office. Mr. Wood seconded the vote of thanks, which Mr. Whiteley acknowledged, saying that although he left Nottingham it was not his intention to leave the section. The members were heartily welcome to what little he had been able to do for them. He had done his best, and was obliged for their good wishes in his new sphere of work.

Mr. J. T. Wood then read a paper by Dr. Herfeld, of Bonn entitled "The Bacteria of Dung and their action," which he (Mr. Wood) had translated from the German. The subject is of much importance in connection with the tanning industry, and as is also obvious, in relation to farming. This was followed by another paper read by Mr. J. O'Sullivan, on "The Hydrolysis and Estimation of Cane Sugar," both papers being by able experts in their special subjects, and difficult of abstraction.

Mr. Wood's paper being first taken for consideration, Dr. Clowes expressed his natural gratification at seeing one of his old pupils making a name for himself, although it might not be in the same line of research that had brought them together. The paper was an admirable summary of recent bacteriological work, and he hoped the

od, who was almost the only man in Nottingham who devoted attention to this subject, would continue it, as his name was recognised as that of an expert.—An animated discussion the question of the oxidation and consequent combustion of, originating in the action of bacteria, which can exist at the temperature of 65° C. Dr. Adrian Brown thought the investigation some light on the heating of hay and the firing of hay—while Mr. Whiteley considered the temperature too low for cellulose to occur, a doubt that Mr. Pentecost also entered.—Mr. Wood explained that the statement was made entirely on the authority of Schloesing, and he certainly says that chemical action until the material would burst into flame if it were dry enough, and used in the original being *verbrennung*.—Dr. Clowes described the Willesden process of preparing canvas by steeping it in salt as an illustration of the action of micro-organisms and may be prevented. Two specimens, one treated and the other not, were buried in the earth for some months and then dug out. In the case of the ordinary canvas the cellulose was rotten, whilst the Willesdenised canvas was practically unaltered.

He remembered that the late Dr. C. R. A. Wright attributed the rot to the absence of the action of micro-organisms.

Discussion on Mr. O'Sullivan's paper commenced by Mr. O'Sullivan asking whether the words cane sugar in the title included beet-sugar, for there seemed to be some incongruity in relation to this. Mr. H. S. Adams, in an article on "The American Beet Sugar," which appeared in the April number of *Cassier's Magazine*, for several years about 60% of the world's sugar supply has been attributed by the sugar beet, and that the great refineries are crushers of sugars. "With them sugar is sugar," Mr. Adams said, "as it is to the chemist, and should be to the outside world, the portals open no wider to the raw cane sugar of the south than to the sugar of the same grade that Europe pours in upon them." He looks at the daily produce reports two distinct quotations, one headed simply sugar and the other beetroot sugar, with the price of the former some 2s. against the latter.—Mr. O'Sullivan said, of course, his use of the words cane sugar was in the sense. It mattered nothing whether the sugar was prepared from the cane or from the beet, if only sufficiently purified. It does not appear in regard to the sugars of commerce that a purer sugar can be prepared from the cane, that is, purer from a point of view.—The Chairman remarked that the prices of sugar are based on certain standards of purity, that for beet being higher for cane.—Dr. Adrian Brown said that the question was only a matter of carrying the refining process sufficiently far so that one could get from the beet, cane sugar pure and simple. He took positively from personal experience as to the difficulty of any difference. When not sufficiently refined, however, the difference would be enough to distinguish the two sugars.—Mr. Archbutt bethought they knew of any other method of distinguishing the two sugars except by the smell?—Dr. Brown: Yes, the smell of the ash, as the beetroot sugar contains potash salts.—The Chairman: An apparatus for the recovery of potash forms part of the refining.—Mr. Whiteley referred to the preference given to sugar for preserving and jam-making purposes; the Chairman suggested that one may always be sure that raw sugar is from the cane. The Chairman continued: A sugar manufacturer is compelled to purify his crystals to suit the market. Finzell's crystals, for instance, which were within one-eighth of one per cent. of purity, were not out of use because of their difficult solubility. He had no objection to advertise any firm, but as he had found it of service in several instances to know where genuine cane sugar could be obtained, he mentioned that the Sankey Sugar Refinery, near Earlestown, used cane sugar in their operations. A formal vote of thanks to the chairman (Mr. Paton) for the evening he had extended to the members that evening was moved by Mr. Archbutt, and was cordially carried.

THE CULTIVATION OF RAMIE.

Ramie should be grown from plants, and not from seeds. A "Nursery" of say 20 acres should be planted out to begin with, this nursery, cuttings obtained for rapid extension to a much larger area. The 20 acres would also give marketable product as

soon as the plants are ready for cutting. It should yield four crops per annum of "ribbons" (i.e. the stem) the commercial product. Each crop should give at least 10 ribbons per acre, which equals 2 tons per season, or probably 20 tons.

But in the first year, the first crop should be put back on the land as manure, as the product of the first crop is valueless for anything, so the first year there are but three marketable crops, each after four crops. The plants, taken care of, last permanently for a hundred years.

The leaves of the plant, and also the rubbish left by the reducing machines, should go on the ground as manure. (Cattle also eat the leaves with avidity).

While ramie grows wild in China the product is very coarse, and to obtain the commercial material of good quality requires care in cultivation, just as any other natural product. The method is as follows:—

In hot or dry countries irrigation is necessary. "No water, no ramie." After ploughing to a depth of 15 inches, and harrowing the ground, and having furrows three feet apart, the plants should be set in late autumn, moist season, 18 inches apart. Broad cart ways should be left at convenient distances apart for getting at the plants at harvesting time. The ground should be ploughed between the young plants similar to cultivating potatoes. Keep ground well weeded. When once a plantation is formed it keeps down the weeds. Liquid manure is best, but others will do. When harvesting, the stems should be cut when the colour changes a few inches from the ground, conveyed to the decorticating machines, and then the fibre given from them packed in bales for shipment. Machines would be shipped from this side. Before packing the "ribbons," thoroughly dry them, so as to prevent fermentation. The plants should be set out in light sandy, deep soil. Crop is yielded the first spring after autumn planting.

A contract at London, to take all that can be produced for five years at the price of £10. per ton *c.i.f.* equal to £20 at least per acre can be fixed. As cost should work out to about £7. per ton at London, the margin seems a good one.

For future guidance it may be mentioned that to cultivate 1,000 acres of ramie, it is calculated a capital of £15,000. would suffice. Then 1,000 acres, yielding, say, 2½ tons per acre per annum at a profit of £3. per ton equals an income of £1,750. on the capital of £15,000. Setting off the £750. against contingencies, the result on this basis equals 40 per cent. per annum. Acreage could be extended out of profits till very soon 100 per cent. profit basis could be attained.

If it were thought well to plant out right away 500 or 1,000 acres instead of beginning with 20 acres of "nursery," then plants could be supplied for the larger acreage.

With the cheap labour of the East, cost might come still lower.

COLONEL NORTH ON THE NITRATE COMBINE.

AS chairman of the Paccha Jazpampa Nitrate Company, Limited, Colonel North, in addressing the shareholders of this company at their recent annual general meeting, said:—There is no doubt but what we have been over-producing lately, and I, as the chairman of the Combination Committee, have done what I possibly could to prevent it. But there are, unfortunately, two or three companies—such as the Rosario, and others—who will insist on having more than they can produce, and while I am quite willing to agree to a combination on equal terms of *quid pro quo*, I am not going to allow one company to take an unfair advantage over another. I control about nine different nitrate works, turning out about one-third of the whole of the nitrate production, and if it comes to fighting, where will they be? We have done well in this company on the whole, but we want to keep something in reserve, because I think we shall have two or three months more fighting. A lot of the old nitrate works have stopped work now because they cannot make a profit, and I think, therefore, you will agree with us that we are in order in keeping this £12,000 back to meet any emergency. The price of nitrate went down a little time ago on account of over-production, but I am pleased to say that it is now going up, and I think we have a fair prospect in two or three months of coming to an understanding all round, which will keep prices up and enable us all to make money. We are making money now, but not so much as we ought to do. My brother has just come back from the property, and he reports that just before he came back they had come across some very valuable grounds. We do not wish, however, to work those grounds only at a small profit, when we can get a much larger profit by means of a combination. I notice that at the Santa Rita meeting, the other day, it was stated that better dividends might have been given had they not gone away from the Nitrate Railways, involving a loss thereby of between £4,000 and £5,000 in the changing. The Rosario Company, also through going away from the Nitrate Railways, lost, it is said, over £18,000. We have not made any mistakes of that kind, thanks to our good management.

PERSONAL.—In the list of honours conferred in connection with the Queen's birthday we notice Mr. Bruhner, M.P., is to be made a Baronet, while the title of G.C.B. is to be conferred upon Lord Playfair.

THE END OF THE CHARLEROI STRIKE.—The furnaces at the glass factories at Charleroi, which have been idle since the glass-workers' strike on April 1, are being relit, as a general resumption of work has been arranged for the 1st inst.

Our Book Shelf.

CELLULOSE. By Messrs. Cross and Bevan. 320 pp., including index, 14 plates, and several illustrations. London: Longmans, Green, and Co. 1895. 12s. net.

This book is divided into three parts. The first two form a very readable monograph of what is known about simple and compound celluloses.

Part I. in particular deals with the typical cellulose and the cellulose group, a description being given of all the chief compounds of cellulose known, and their chemical and physical attributes. Nitrocelluloses form a most interesting section. Under Lignocelluloses in Part II. there is a vast amount of valuable and suggestive information.

Part III. is most interesting, and supplies a want, in that it deals with the experimental and applied portions of the subjects that have been reviewed in the two first parts. It is the most positive portion of the book, which up to this point has been neither a text book nor a manual, purely and simply, though at times a little of both. An outline of the more important branches which should be treated experimentally is given, and the student has a clearly defined and highly instructive course mapped out.

The rest of the book is devoted to the principles of the technology of cellulose, and teems with possibilities which may form the nuclei of important advances in the future. Though by no means a text book, it forms in many ways one of the best guides a student can have for the study of the celluloses. A vacancy has been formed by modern progress, which has in consequence been somewhat difficult to fill, but this work constitutes a fitting occupant. In it we have a comprehensive, concise, and connected record of the investigations that have been made on the celluloses. In harmony with certain passages of the book the paper on which it is printed is specially selected, and of rare quality.

CHEMISTS AND THEIR WONDERS. By F. M. Holmes. 160 pp. Illustrated. London: S. W. Partridge and Co. 1895. 1s. 6d.

This is one of the "World's Wonders" series, and is a conversational, popular description of the chemistry of such manufacturing processes as the production of candles, soap, matches, gas, aniline dyes, glass, dynamite, rubber, manure, disinfectants, and also the principles of photography. It is often thought to be otherwise, but, as a fact, it is much harder to give a correct popular account of manufacturing processes when a scientific explanation is to be included than it is to write a short treatise on the chemistry alone. The language is oftentimes misleading, and the dangers of creating misconceptions are great. This work is on the whole fairly free from such faults, though it is not without its incongruities. It is commendable as a "reward" book, since it is at all events a great improvement on some of the older works of this type, which generally consist of glaring inaccuracies, which are the result of straining after a style of childish simplicity, mixed with confusing descriptions of some difficult technicalities. The day of this kind of educational work is nearly spent, and its waning needs no prolongation.

Parliamentary Jottings.

THE APPOINTMENT OF COLLIERY CHECKWEIGHMEN.

IN the House of Commons last week Mr. Woods asked the Home Secretary if his attention had been called to the circumstances in connection with the appointment of a checkweighman at the Ashton's Green Colliery, Parr, St. Helens, on 23rd April, 1895; whether he was aware that, after the miners had had a meeting and passed a unanimous resolution to elect a checkweighman by ballot, in accordance with the provisions of the Coalmines Regulation Act, 1887, and also had appointed two of their number to conduct the ballot, the top manager refused to allow these men to go on the pit bank, that the manager of the colliery, Mr. Thomas Pennington, interfered and urged the men, in contravention of the Act of Parliament, to decide the matter by a show of hands, and that this is the first attempt in the county of Lancaster of a colliery manager to interfere with the appointment of a checkweighman; and whether, in view of the fact that the miners are dissatisfied with this interference, he would cause a thorough investigation into the circumstances under which Henry Pennington was alleged to be appointed as checkweighman at this colliery.

Mr. Asquith: The mines inspector has investigated this matter. He finds that it is the case that the top manager refused to allow the men who were appointed to hold the ballot to go on the pit bank, on the ground that they were strangers and not employed in the colliery. I have not been informed as a fact whether this is so, but I am informed that the top manager assigned it as his reason for acting as he did. The manager says that he did not interfere with the

men or urge them to decide the matter by show of hands, but on being asked he expressed an opinion that this might be done. The inspector has now called attention to the provisions of section 14 of the Coal Mines Regulation Act, and it has been arranged that a election shall be held by ballot. The employer has undertaken to place any difficulty in the way of such an election.

SEWAGE POLLUTION AT THE MOUTH OF THE MERSEY.

Mr. Bryce, in reply to Colonel Cotton-Jodrell, said no complaint had reached the Board of Trade as to the discharge of mud bog into the Mersey and adjacent channels, and the great increase of silty and insanitary deposits at low water on the shores adjacent to combe, Egremont, and New Brighton; but he understood that subject to which he referred was engaging the serious and constant attention of the harbour authority and of the Acting Conservator of the Mersey. Apart from the amount of silt dredge from the Mersey which was discharged in the centre of the river he was informed the sewage of the large and increasing population of the Mersey named by the hon. member was discharged on the foreshore of Mersey, considerably above low-water mark, which was more likely to produce the inconvenience complained of than the deposit of silt in the centre of the river. If the hon. member desired he could make further inquiries as to the deposits made under existing statutory powers.

THE PURITY OF FOREIGN BUTTER.

On Monday Mr. H. Gardner, replying to Sir R. Paget, said arrangements had recently been made by which samples of butter would be taken at the ports of importation and analysed by principal chemist of the Government laboratories, who was also chief agricultural analyst. A certain number of samples had already been taken, and he was in communication with the Treasury and the Board of Customs with a view to the settlement of the matter to be pursued in the event of its being found that any offences under the Sale of Food and Drugs Acts, the Margarine Act, or the Merchandise Marks Act had been or were likely to be committed.

TIPS FOR TRADERS.

AN office of reference has been opened at Bucharest under the control of the Bucharest Chamber of Commerce, from whence accurate information can be obtained as to the trustworthiness of Roumanian agents and houses, by merchants having dealings with Roumania.

GOLD working has been handicapped in N. Carolina owing to difficulty of treating the sulphurous ores. The chlorination process, however, is now reported as giving good results at the Reimer mine. The cyanogen bromide process should find an opening here.

LINSEED OIL is extracted from the flax seed to a large extent in Manitoba. The flax seed cake resulting finds a good market in Europe. The Boden Mills, in Waterloo County, export 100 tons of this cake weekly to the United Kingdom.

CHROME IRON ORE is now being profitably worked by the Lake miners, St. Francis District, Quebec. Last month, it is said 400 tons of this ore was shipped from Portland to Liverpool. The ore averages 50% of pure material. The mine has only been open about nine months.

GYPSUM and nickel and copper mining in Ontario shows an increased production, according to the returns for 1894.

SALT and PETROLEUM, however, in the same district have been worked to a smaller extent than in 1893. The same applies to natural gas.

TARIFF CHANGES.

There are from time to time many alterations in the Customs regulations abroad, which it is well for those trading in chemicals, oils, and raw materials to be acquainted with. The following are some of the most recent changes of interest to the foregoing:—

SALT imported into the Cameroons is dutiable at 10 marks per 1,000 kilos. [English ton is 1,015 kilos.—Ed. C. T. J.]

SILICA STONE, ground, used as a cement between furnace linings, imported into the U.S.A. is subject to a duty of 20% ad valorem.

SODIUM HYPOSULPHITE is also dutiable at 25% ad valorem. NEUTRALINE, a pale oil obtained from crude petroleum, has an import of 25% ad val. as an expressed or distilled oil. Distilled oil of paraffine comes in the same category.

CRUDE PLATINUM, as extracted from its ores, is admitted duty free. FILTER PAPER, ready cut into discs, is dutiable at 8 cents per pound and in addition 15% ad val.

Trade Notes.

ON STILL OBDURATE.—H. Moissan has attempted to produce compounds by acting on argon, under various conditions, with the rarer elements which unite more or less readily with it. 100 c.c. of the new gas were placed at his disposal by Prof. y. In a part of this, titanium, boron, and lithium, were strongly without apparent change. Similarly, uranium (containing 34 t. of carbon) did not absorb an appreciable amount of the gas heated with it for twenty minutes. A quantity of the gas was led into a platinum tube of special construction, and there to the action of pure fluorine, both at the ordinary temperature and in the presence of induction sparks; in neither case could any reaction be observed whatever the proportion of argon present. The difficulty of separating fluorine has not allowed of the effect of long-continued being observed. The results were entirely negative; under conditions of these experiments, no compounds of argon have been obtained.—*Comptes Rendus*.

D PULP via THE SHIP CANAL.—In addition to the regular lines, which bring consignments of wood pulp to Manchester every week, we understand that Messrs. Simpson, Howden, & Co. charter steamers at frequent intervals to bring complete cargoes from Norway, &c., to the same port. Last week their steamer *Skulda* discharged a full cargo at Runcorn from Christiania, and proceeded to Weston Point, whence she will sail for Tuborg, having been chartered outwards by a Liverpool firm. Other cargoes are to arrive per the *Palomares* (s), 876 tons, *Rolf* (s), 422, *Odin* (s), 446, *Panther* (s), 590, and *Odin* (s), 437, from Christiania, the *Courier* (s), 362, will bring a consignment from Sannesund. Parcels of Canadian pulp will be discharged by the steamers *Alma* and *Cynthia*, from Halifax, N.S., and Montreal respectively. We may add that a local shipowning firm has made a contract for four thousand tons of wood pulp from Kotka to Manchester.

OVERING NITRATE FROM BILGE WATER.—The following is the gist of a recent patent in this connection:—"Hitherto the drainage of bilge water collecting in the bilges and limbers of ships used for transportation of nitrate of soda has generally been considered and has consequently been pumped out and allowed to run to sea. Now the object of this invention is to extract from such drainage bilge water the nitrate of soda contained in it. For this purpose the drainage and bilge water is collected in a suitable cistern or receptacles, and partly evaporated by the aid of steam, or other suitable means, so that the density of the remaining liquid is increased to such a point that when allowed to cool part of the nitrate of soda will be deposited on the bottom and sides of the cistern or receptacles. The liquid is then allowed to cool, and after the nitrate of soda has been deposited on the inner surface of the cistern or receptacles, it is run off into another receptacle, in which it is again partly evaporated to increase its density, and again allowed to cool and settle—this process of manipulation being repeated until practically all the nitrate of soda has been obtained from the drainage."

CHEMISTS' SALARIES IN THE LONDON COUNTY COUNCIL.—At a recent meeting of the London County Council, the General Purposes Committee reported that they had received an application from Mr. Dibdin, the council's chemist, asking for an increase of salary. The Committee stated that Mr. Dibdin was appointed by the late Council of Works, in 1877, as gas examiner, and in 1878 was employed as consulting chemist to the Board—Mr. Keates as his assistant. On the death of Mr. Keates in 1882, Mr. Dibdin was appointed as assistant at a salary of £250 a year, and in 1884 his title was changed to "chemist," and his salary raised to £400. The following year his salary was increased to £500., and in 1886 to £600. In 1887 the Council increased the salary to £700., at which amount it had remained. It was pointed out that among Mr. Dibdin's duties were the superintendence of three chemical laboratories, and that he had the department numbered 83 on its staff, as compared with 882. The Committee stated that they thought that the services rendered by the chemist merited recognition, and they therefore recommended that the salary of Mr. Dibdin, the chemist to the Council, be raised from £700 to a maximum of £1,000 a year by two annual increments of £150.—On the motion of Mr. John Burns, the consideration of the matter was postponed.

CLASSIFICATION OF GLASSES.—Hitherto there has been no scientific classification of glass, says the *Journal* of the Society of Glass Technicians, according to hardness. This want has been pointed out by Mr. W. Niehls, with the co-operation of the German *Technische Reichsanstalt*, who give the following well-known scale of hardness for glass, divided into 8 degrees, viz:—(1) The softest glass in commerce, French crystal. (2) Soft Thuringian glass,

used for artificial flowers, toys, &c., English crystal. (3) Hard Thuringian glass, used for Thermometers, finer apparatus, &c. (4) Jean normal thermometer glass—16" of Schott & Co. (5) French hard crystal, used in Paris for normal thermometers—by Tonnelot. (6) Jena boro-silicate thermometer glass—59" of Schott and Co. (7) Jena thermometer glass free from alkalis—122" of Schott and Co. Both 6 and 7 are used for high temperature thermometers and many other purposes. (8) Cavalier's Bohemian crystal glass, used for combustion tubes. Normal scales, arranged as above, have been prepared, and can be obtained through the dealers in chemical apparatus. They contain, on cardboard, illustrations of the results of fusing—as described above—each number in the series with the next following number. Compartments also are well stocked with small rods of each degree on the scale—each rod stamped with its number—to be used for testing.

CHEMICAL TRADES SECTION OF THE LONDON CHAMBER OF COMMERCE.—At the annual meeting of the London Chamber of Commerce, held at Botolph House, Eastcheap, E.C., the report, which was adopted, stated that four meetings of the Chemical Trades Section and its committees were held during the year. During the year the section had under consideration draft rules proposed to be issued by the Home Office for the better regulation of chemical works in the interests of workmen, which, it transpired, had been already considerably modified through the representation made to the Home Office by the special committee of the section. It was agreed that the modifications to be suggested should also be incorporated in the proposed rules for bichromate works. The Section also considered the provisions of the Thames Conservancy Bill, affirming the opinion that its provisions would be extremely prejudicial to the chemical section on grounds which were set out in clause 7 of the petition deposited by the Chamber. Attention was also directed to the use of metric weights and measures in the trade. The County Council, through its inspector, had intimated to a large firm of manufacturing chemists that it was illegal to use any weights or measures even for export purposes other than those conforming to the imperial standards. In view of that it was felt absolutely necessary in the interests of the trade to at once introduce a Bill into Parliament with the object of amending the Weights and Measures Act of 1878 and 1887. An amending Bill had been drafted, and it was decided to bring the views of the Section before the Select Committee of the House of Commons on Weights and Measures. In view of the sittings of the Parliamentary Committee on adulteration, the question of the Foods and Drugs Act was again under discussion, and the Section affirmed that it was desirable that drugs should be treated in a separate section of the Act, and that they should not, as at present, be associated with foods. Two members of the Section were appointed to appear, if needed, before the Committee to recommend the adoption of that course. It was also urged that a Board of Reference, for appeal in cases of disputed analysis, should be constituted. Representations were made to the Home Office, through H.M. Inspector of Factories, on behalf of white lead manufacturers, as to certain rules which it was proposed to issue for the better preservation of the health of employees engaged in that industry. The result of these representations was that a set of rules was ultimately issued, which were considered satisfactory to the employers concerned. Other subjects discussed by the Section included Bills of Lading, Government contracts, and the patenting of machinery.

Market Reports.

REPORT ON MANURE MATERIAL.

The market continues quiet, but buyers are beginning to inquire for material for next season, and in some departments higher prices are being asked. The position of mineral phosphates is unchanged. Prices asked for the high grades preclude business, but the lower grades, such as South Carolina and Algerian, being in an abundant supply. Raisers are making concessions in order to effect sales. River Plate bones are more firmly held, there being much difficulty in securing suitable vessels, and £4. 5s. per ton now required for anything of handy size, summer shipment. For crushed Kurrachee bones, autumn shipment, £4. 5s. per ton, ex quay Liverpool, refused, and £4. 7s. 6d. now asked. East Indian bone meal, too, is more firmly held, and £4. 7s. 6d. to £4. 10s. per ton is about the value. £4. 5s. repeatedly bid, but refused; the available stuff at the other side being mostly disposed of, and shippers being shy about offering for autumn shipment. On spot supplies are scarce, and the value is about £4. 10s. to £4. 12s. 6d. per ton, in retail, though the season is nearly over. Nitrate of soda is firm, but there is not as much doing in any position as there was a week or two ago. On spot, the value of ordinary quality is 8s. 1½d. per cwt., of good 8s. 3d., and of refined 8s. 4½d. per cwt. September-October shipments are worth equal to about 8s. 4½d. to 8s. 5d. per cwt.

TAR AND AMMONIA PRODUCTS.

Benzols are quiet, at 1s. for 90's, and 11d. for 50/90's. Carbolic acids are firm and in good demand at 1s. 8½d. for 60% crude, and 6½d. for 40% crystals. Resales of crystals can be had possibly a shade under the above quotation. Crude naphtha is unaltered, but solvent is the turn higher at 1s. 2d. Creosote and anthracene quiet. Pitch, 36s. to 37s. 6d., f.o.b. East Coast.

Sulphate is firmer. The low values at the beginning of the week have given place to better prices. Makers appear firm, and the market is disposed to rise. Quotations are:—London £9. 15s., Liverpool £9. 17s. 6d., Hull £9. 17s. 6d., and Leith £9. 15s. to £9. 16s. 3d. As a matter of fact, £10. has been offered at Hull, the same having been refused for f.o.b. Liverpool.

MISCELLANEOUS CHEMICAL MARKET.

Business in the alkali trade is fairly active, and prices all round are well sustained. Bleaching powder firm at £7. per ton, free on rails makers' works, and £7. 5s. to £7. 10s. per ton, f.o.b., for hardwood casks. Ammonia alkali remains steady at £2. 17s. 6d. to £3. per ton, bags, f.o.r. makers' works. Leblanc soda ash ½d. per degree, f.o.b. In soda crystals there is no movement, price still ruling at 36s. to 37s. per ton, f.o.r. Saltcake is a firmer market, owing to reduction in make, and makers are realizing from 16s. to 18s. per ton, f.o.r., in bulk. Caustic soda, if anything, a shade firmer—prices, f.o.b. Liverpool, are as follows:—77%, £9. 7s. 6d.; 74%, £8. 7s. 6d.; 70%, £7. 10s.; 60%, £6. 10s. per ton, 10-ton lots and upwards. Bicarbonate a shade easier. Chlorate of potash steady at the recent advance. Chlorate of soda 6½d. per lb. Sulphate of copper still a firm market, and in fairly brisk demand. Potash, caustic and carbonate, without change in values. Brown acetate of lime a shade better at £5. 5s., c.i.f.; grey quiet and nominally £8. 10s., c.i.f. Other acetates are still in small request, and without any improvement in values. White powdered arsenic in short supply, spot quotations being from £14. 15s. to £15., f.o.r. Garston. In yellow prussiate of potash there is no recovery from the recent fall, and spot prices are ruling from 7¾d. to 8d. Prussiate of soda 5¾d. to 6d. Carbolic crystals are still a firm market, with advancing tendency. For aniline oil and salt the demand is still quiet, and prices are unaltered. Sulphocyanides are without change. Generally in the chemical trade there is no improvement in demand or values.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron, dull: Scotch warrants closed at 43s. 3½d., Middlesbrough 35s. 1d. cash, and hematite 43s. 5½d. Copper, steady: Chili bars, G. O. B.'s and G. M. B.'s, closed at £43. 11s. 3d. to £43. 16s. 3d. cash, and £44. to £44. 5s. three months. Tin, firm: Straits closed at £64. 12s. 6d. to £65. 2s. 6d. cash, and £65. 2s. 6d. to £65. 12s. 6d. three months; Australian, £65. 7s. 6d. English ingots, £68. 10s. to £69. Lead, firm: Spanish, £10. 7s. 6d. to £10. 10s.; English, £10. 10s. to £10. 12s. 6d. Silesian spelter: ordinary, £15. 2s. 6d. Nickel, 1s. 2½d. Antimony, £31. 15s. Quicksilver: first hands, £7. 10s.; second hands, £7. 8s. 6d. Copper shares, steady: Cape, 2½; Copiapo, 1½ to 2½; Libiola, 3½ to 3½; Mason and Barry, 2½ to 3½; Rio Tinto, 15½ to 16½; Tharsis, 4½ to 5½.

GLASGOW, WEDNESDAY.—Market steady, with moderate business. Scotch done at 43s. 3d. and 43s. 3½d. cash, also at 43s. 5½d. one month, closing with buyers at 43s. 3½d. cash, sellers ask 43s. 4d. Cleveland done at 35s. 0½d. cash, also at 35s. 1½d. 23 days; closing with buyers at 35s. 1d. cash, sellers ask 35s. 1½d. Cumberland hematite done at 43s. 7d. 23 days; closing with buyers at 43s. 5½d. cash, sellers ask 43s. 6½d. Middlesbrough hematite done at 42s. 4d. 23 days; closing with buyers at 42s. 2d. cash, sellers ask 42s. 3d.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

OILS.—Palm oil is firmer, both in position and price, a fair business having been done in Lagos at £20. 15s. to £21.; soft oils £19. 15s. to £20. The prices of olive keep steady, the market being firm. Linseed is firmer in price, Liverpool makes being steady at 22s. to 22s. 6d. per cwt., in export casks. There is not a great deal doing in cottonseed, which is easy at 18s. 6d. to 19s. per cwt. for Liverpool refined in export barrels; American 18s. 6d. per cwt. Castor oil is at a stand still for the present, good seconds Calcutta being firm both on spot and to arrive at 2½d. for spot. First pressure French has been selling ex quay at 2½d. per lb. Resin keeps in fairly good demand at current quotations, but there is nothing very great doing. Tallow firm, with a very good inquiry. Spirits of turpentine firm, and in medium

demand at 23s. 6d. per cwt. Petroleum steady: American, 6¼d. to 9d., according to quality; Russian refined, 6d. per gallon.

COLOURS are steady, without alteration in prices. Ochres: Oxfordshire, common, £10., medium, £12., best, £15. Derbyshire, common, 40s.; medium, 50s., best, 60s.; Welsh, best, 90s., seconds, 50s., and common, 18s.; Irish, Devonshire, 40s. to 45s.; French, J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Umbers: Turkish quiet; Devonshire, 50s. to 55s. White lead, £16. Red lead unchanged. Venetian red, £6. to £10. Cobalt: Prepared oxide 9s. 9d.; black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2, 2s. 6d. Oxide of iron: Common, £7.; medium, £10.; finest, £20. Zinc oxide, £22. 10s. to £25.

LIVERPOOL MINERAL MARKET.

The market has continued to rule firm, whilst in some minerals there has been an advance in price. Manganese: A fair quantity has arrived this week, but being sold for forward delivery, goes direct in consumption; prices remain steady without alteration. Gross manganese still continues in steady demand at £6., £8., £10., and £12. 10s. per ton, according to quality. Manganiferous iron ore is sold slowly at 15s. to 17s. 6d. per ton, c.i.f., in cargoes. Bauxite continues firm, especially Irish Hill brand, and prices are 20s. per ton for first quality, 16s. per ton for second quality, and 12s. per ton for third quality, f.o.b., in cargoes. Chrome ore: There are no arrivals report this week, and prices continue firm, but unaltered. French chalk: Arrivals have somewhat increased, but prices are firm and unchanged. Tungsten alloy continues steady without any alteration in prices: Chrome alloy is in demand at £20. per ton for 20% to 25% with other grades in proportion. Plumbago sells freely: foundries and lubricating qualities being done at £6. per ton, with other qualities according to grade. Arsenic continues firm at about £16. 10s. per ton. Carbonate of barytes: The demand is easier, but prices remain firm: smalls at 70s., and lump at 85s. to 100s. per ton, according to grade. Sulphate of barytes is unaltered, the demand for both lump and powdered being steady; prices for powdered are firm at: No. 1, 6s. to 70s. per ton; No. 2, 55s., and No. 3, 47s. 6d. to 50s. per ton. China clay is steady at about 30s. to 40s., according to quality. Fuller's earth is in increasing demand, especially for the best qualities: lump, 50s. to 55s. per ton; impalpable powder, 80s.; a ground about 55s. per ton. Ochres and umbers are unaltered: J. ochre being done at 60s. per ton, and prime levigated umber at 40s. 60s. per ton, f.o.r., in bags.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

In the general chemicals market there are but few changes in prices. Prices are on the whole steady, and shipments are reported as being very fair average of bulk for the present section of the shipping season as compared with former years. The expected closing of a Tynes Leblanc works is attracting some attention here, and speculations are current regarding its effect on the future of the United Alkali Company. The position of the latter, it is anticipated, will be strengthened.

In the mineral oil and paraffin section the position is maintained with very little alteration. Burning oil stands at the recent reduction of one penny per gallon, but there are few buyers at this season of the year, and makers are stocking chiefly. Naphtha (paraffin spirit) slightly firmer, and lubricants of the 885° grade are in increased demand, and firm of price.

Of the dye chemicals, cutch and gambier both keep very firm on spot. Bichromate of potash and bichromate of soda remain steady, the Scotch combination prices so long ruling.

Since last report matters have not improved with sulphate of ammonia, and the price is considerably lower, at £9. 12s. 6d. for spot only, there being nothing at all doing for forward.

Chief prices current are:—Soda crystals, 35s. nett, Tynes soda ash, 48/52°, £3. 15s. to £4. 5s. nett, Tynes; white alkali 48/52°, £4. 10s. to £5. 5s. nett, Tynes; alum in lump, £5. 10s. nett, Glasgow; caustic soda, white, 74° £9., 70/72° £7. 15s., 60/62° £6. 15s., and cream 60/62° £6. 10s., all nett, Liverpool; bleaching powder, £6. 5s. to £7., nett, Tynes; saltcake, 17s. 6d.; borax, English refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 5d. less 5%, Liverpool; nitrate of soda 8s. 3d.; sulphate of ammonia, £9. 12s. 6d. prompt f.o.b. Leith; sal ammoniac, first and second white, £39. and £37. nett, any port; sulphate of copper, £15. 12s. 6d., less 5%, Liverpool; paraffin scale, 2½d.; and soft, 1¾d. to 2½d. per lb.; paraffin wax 120° semi-refined

4d.; paraffin spirit (naphtha), 5d. to 6d. per gallon; burning), No. 1, 6½d. and crystal 6¾d. at works, for (English sales 1d. lower); ditto (lubricating) 865° 5° £4. 10s. to £5., and 890/895° £5. to £5. 10s. Week's sugar at Greenock were 11,100 bags beet refined, 34,527 refined, and two shipments of cane unrefined, particulars

PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

Business is hardly equal to usual this week, buyers appearing the holiday next week. The movements in linseed being causing unusual interest, it having advanced fully £1. in the week. The cause no doubt is owing to London seed having sold forward in blank expecting to supply demands from Indian linseed, which is not coming forward as consequently they are compelled to buy anywhere to meet demands, the closing quotation being 20s. 3d. spot, and the same to August; 19s. 9d. the last four months. Refined, £1. to £1. 10s. per ton extra. Export of linseed for 1020 cwt. Refined cotton has improved about 10s. per steady at 17s., at which price, however, there are re-sellers. quoted 17s. 3d.; Nov-April, 17s. 4½d. to 17s. 6d. the spot, offers at 15s. 6d. Casks 17s. 6d. and ordinary 6d. per ton extra. Export of refined oil for the week, Cod oil unchanged. Castor oil, first pressure, from 2¼d. of turpentine, 23s. 1½d. Olive oil unchanged. Sod from £17. 10s. per ton. Liquid scouring soap for wool 6 per ton. Wool cream for carding purposes, £12. per cwt. 14s. 6d. per cwt.

—Linseed cakes steady in price, but in small demand; £6. to £6. 2s. 6d. Russians, £5. 12s. 6d. to £5. 15s. 5. 12s. 6d. Oil cakes, £5. 5s. Cotton cakes in limited prices steady; best makes, £4.; second, £3. 15. Rape red.

—Trade not quite so good; still seasonable. Prices are: unchanged. White lead threatens to advance 10s. per an red, dry, £4. per ton. Yellow ochre, £3. 17s. 6d. and mineral black, £3. 15s. Ultramarines from 3d. to Vermilionettes from 4d. to 1s. per lb. Blue, black, venetian red paints from £11. per ton. Imperial black 10s. per ton. Paint remover, 25s. to 30s. per cwt.

TYNE CHEMICAL REPORT.

TUESDAY.

Very little change to report in the market. 76/77% caustic 5s. per ton; 70%, £7. 15s. per ton. Sulphur, £3. 17s. 6d. soda crystals, £1. 16s. 6d. per ton, locally. The only other works on the Tyne (outside the Union) is reported as likely operations at an early date. This may perhaps tend to increase competition and strengthen the market here.

powder, softs, £7. 5s. per ton, nett; hard, £7. 10s. per ton; soda, 76/77%, £9. 10s. per ton, nett; do., 70%, £7. 15s. recovered sulphur, 2 cwt. bags, £3. 17s. 6d. per ton, nett; 8%, £3. 15s. per ton, nett; do., 52%, £4. 2s. 6d. per do., 56%, £4. 10s. per ton, nett; alkali, 36%, £2. 15s. white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. nett; do., 52%, £5. 5s. per ton, nett; hyposulphite of t. casks, £6. per ton, nett; do., 1 cwt. kegs, £6. 12s. 6d.; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. nett; soda crystals, casks, £1. 16s. 6d. per ton, t; do., 2 cwt. bags, £1. 16s. 6d. per ton, nett; potash, 5¼d. per lb., less 6%; pearl hardening, t, nett; pure white sulphate of alumina, £4. 2s. 6d.; blanc fixe, £7. 10s. per ton, nett; chloride of barium, t ton, nett; carbonate of alumina, £28. 15s. per ton,

nett; aluminate of soda, £33. 15s. per ton, nett; in 5 ton lots, £28. 10s. per ton, nett.

SALT.—South Durham salt is quoted at 9s. to 9s. 6d. per ton, f.o.b. Tees.

COALS.—The trade is steady as far as best steam coals are concerned, but other qualities are weak. Several contracts for gas coals have recently been concluded at prices said to be very low. To-day's prices are: Best Northumbrian steam, 8s. 9d. to 9s. per ton; second qualities, 7s. 9d. to 8s. per ton; small steam, 3s. 6d. to 3s. 9d. per ton; bunker coals, 6s. 6d. to 7s. per ton; coke, steadier, 12s. 6d. to 13s. 6d. per ton.

New Company.

Subra Fibre Co., Ltd.—CAPITAL £100,000, in shares of £1. each. This company has been formed to acquire and work certain patents for the chemical treatment, and decorticating of ramie and reha fibre, &c. The subscribers to the memorandum of association are:—F. D. Frost, 11, London-street, E.C., rope manufacturer; H. Gough, 8, St. George's-road, S.W., general; W. S. Brooke, 9, The Avenue, Brondesbury, colonel; H. F. Lewis 48, Sydenham-road, Croydon, engineer; G. Subra, J. C., 10, Norfolk-street, W.C., ingénieur civil; W. Smith, 10, Norfolk-street, W.C., merchant; M. L. Ross, 110, Shaftesbury-avenue, W.C., gentleman.

The Patent List.

This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

Apparatus for Electrical Purposes. H. Guthrie. 9,429. May 13.
Brick-making Machinery. J. Jones. 9,468. May 14.
Developing Colouring Matters in Fustic Extract. W. Inman. 9,471. May 14.
Refining Wool Fat. E. Maertens. 9,503. May 14.
Improvements in Insecticides. J. S. McDougall and J. T. McDougall. 9,535. May 14.
Manufacture of Alkaline Carbonates. W. Von Baranoff. 9,555. May 14.
Gas Washing and Scrubbing Apparatus. C. C. Walker. 9,556. May 14.
Manufacture of Alkaline Bichromates. M. W. Beylikgy. 9,558. May 14.
Producing Concentrated Solutions of Hydrofluosilic Acid and Hydrofluoric Acid, as well as Fluosilicate and Fluorides therefrom. W. P. Thompson. 9,608. May 15.
Smoke Utilising Apparatus. E. Edwards. 9,620. May 15.
Precipitating Metals from their Solutions. C. Raleigh. 9,635. May 15.
Improvements in Disinfectants. A. D. Cohen and J. C. S. McLay. 9,671. May 16.
Smoke Consuming Furnaces. A and J. Tassil. 9,710. May 16.
Tanning with Mineral Agents. M. J. Volcker and M. W. G. Bergmann. 9,713. May 16.
Steam Heating and Distilling Apparatus. J. L. and J. A. Dorian. 9,729. May 16.
Treating Smoke. D. W. Stone and B. Chaplain. 9,739. May 16.
Indelible Ink. R. T. Sutton. 9,790. May 17.
Diaphragms for Electrical Purposes. R. Comboul. 9,806. May 17.
Improvements in Fertilizers. A. D. Cohen and J. C. McLay. 9,817. May 18.
Water Softening Apparatus. C. E. Gittings. 9,829. May 18.
Manufacture of Sulphate of Lead and Lead Pigments. H. R. Gregory. 9,891. May 18.

Gazette Notices.

BANKRUPTCY ACTS, 1883 and 1890.

Adjudications.

WEARE T. B. (trading as Weare, Clifford, and Co.), America Square, E.C., and East Bank, Stamford Hill, N., oil and colour merchant.
SPOOR, JOHN LAMB Higham and Borstal, Kent, cement manufacturer.

IMPORTS OF CHEMICAL PRODUCTS

AT

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

ending May 18th.

5 pkgs. Philipps & Graves

27 pkgs. A. & M. Zimmermann

Acetone—

Germany, 9 pkgs.

A. & M.

Zimmermann

Holland, 5

T. H. Lee

Alkali—

Germany, 440 c.

F. W. Berk & Co.

Alum—

Germany, 173 pkgs. Ohlenschlager Brs.

Antimony Ore—

Portugal, 33 t.

Major & Field

Corsica, 10

J. Bamber

Japan, 150

Lucas & Spencer's

Wf. Ld.

Germany, 10

Pratt & Sons

A. Turkey, 57

French & Smith

Singapore, 118

H. Grey, jun.

Sydney, 19

H. Bath & Son

Asbestos—

Germany, 46

Craven & Co.

Barium Chloride—

Holland, 24 pkgs.

Petri Brs.

Barytes—

Holland, 80 cks.

Burrell & Co.

Bereford & Co.

Belgium, 6	W. Harrison & Co.	Divl Divl	U. States, 50	275	Oblenschlager	Austria, 10	City Co.
" 112	J. L. Lyon & Co.	E. Indies, 310 pkgs.	" 2	6	Williams, Torrey	Belgium, 83	"
Holland, 22 cks.	Burrell & Co.	Extracts	" 498	500	G. Clark & Sons	U. States, 250	Dare
Germany, 19	W. Pope & Co.	Adelaide, 1,349 pkgs.	Glue—	£704		Holland, 1,795	Little & J.
" 19	P. Jantzen	France, 40	Lead Acetate—			Germany, 850	F. Clenden
" 75	Moreton, Cox Bros.	U. States, 510	Germany, 25 pkgs.	F. Boehm		Belgium, 247	Lep
" 75	W. Harrison & Co.	Denmark, 10				Holland, 923	Vokim
" 75		" 10				" 100	G. Rahn
Camphor—		U. States, 100	Manure—			Stearine—	
Hong Kong, 88 pkgs.	City Coml. Wf.	Germany, 100	Germany, 10 t.	Charles & Fox		France, 21 bgs.	Mordant
Japan, 80	W. Balchin	Germany, 410	E. Indies, 100	A. Hunter & Co.		" 200	H. Hill
China, 100	T. Merry & Son	Denmark, 3	Germany, 51	F. W. Berk & Co.		" 159	Eversand
" 51	S. Figgis & Co.	" 2	" 40	Co-op. Lightgr.		Belgium, 113	H. Hill
Japan, 182	T. Merry & Son	France, 159	" 10	Association		France, 140	Wallace &
Hong Kong, 20	R. Warner & Co.	Jamaica, 6 t.	Argentine, 84	R. Morrison & Co.		Talc—	
Germany, 12	City Coml. Wf.	" 18	Germany, 20	J. A. Cockman		France, £120	G. G. Ha
Ceylon, 10	L. & I. D. Jt. Co.	Fustic	Methyl Alcohol—	W. G. Blagden		Tallow and Stearine—	
Japan, 21	R. Warner & Co.	E. Indies, 4 cts.	U. States, 100 brls.	J. Kertel		U. States, 31 cks.	Tingle
Caoutchouc—		Holland, 94 pkgs.	Germany, 9 drs.	Stein Bros.		Tartaric Acid—	
Rangoon, 25 c.	S. Figgis & Co.	E. Indies, 402	Mica—			France, 24 pkgs.	E. & F. V
E. Indies, 31	Butler's Wf. Ld.	Germany, 301	Ceylon, £96	E. Davis & Co.		Holland, 8	Kirkpatrick
" 40	Elkan & Co.	E. Indies, 266	E. Indies, 488	W. M. Smith & Sons		France, 20	Robinson
" 30	Anderson, Weber	" 107	Molasses—			Holland, 8	B. & F. V
Guatemala, 18	Prop. Bull Wf.	" 14	U. States, 250 cks.	1,360 c.	J. Newcomb	Turpentine—	
France, 18	Kleinwort	Germany, 135	Ochre—			U. States, 51 lbs.	Chimney
Zanzibar, 120	Sons & Co.	E. Indies, 204	Holland, 26 pkgs.	2 cs.	Phillipps &	Ultramarine—	
E. Indies, 1	L. & I. D. Jt. Co.	" 123	Belgium, 16	F. Claydon & Co.		Belgium, 175 pkgs.	3 brls. W. H.
Rangoon, 13	Montgomery & Co.	Indigo	France, 84 brls.	Harrison & Co.		" 9	18 cks. Leach
" 330	Arracan Co., Ld.	E. Indies, 4 cts.	Rangoon, 820 cs.	H. Hill & Sons		Holland, 10 brls.	G. Rahn
E. Indies, 4	Prop. Bull Wf.	" 11	U. States, 177	G. H. Frank		" 6 cs.	Herna
Zanzibar, 10	H. Johnson & Sons	" 54	320 pkgs.	Mordant Bros		Germany, 6 cks.	H. L.
France, 39	Wallace Bros.	" 58	Phosphate—			Varnish—	
Aden, 19	Ralli Bros.	" 25	Belgium, 100 t.	Sawer, Sons, & Co.		U. States, 11 pkgs.	Smellie
Portugal, 100	W. M. Smith & Sons	" 7	France, 230 t.	West & Penrose		Belgium, 12	Scobbe, Wilson
E. Indies, 45	Ralli Bros.	" 24	France, 450	Anglo-Contl. G. Wks.		Verdigris—	
Zanzibar, 35	E. Boustead & Co.	" 52	" 115	Miller & Johnson		France, 1 pkgs.	Burrell
Japan, 100	Clarke & Smith	" 86	" 133	Odams Chemical		White Lead—	
Castor Oil—		Belgium, 147	Belgium, 40	E. Jacob & Sons		Germany, 10 cs.	Gross
France, 4 cs.	W. G.	Logwood	Phosphate Rock—			Belgium, 16 cks.	10 brls. J. L.
" 38 brls.	Frith & Co.	Jamaica, 11 t.	Belgium, 310 t.	Lawes Manure Co.,		Germany, 90	W. & A. Ha
E. Indies, 500 cs.	J. Greig	" 15	France, 475	A. Hunter & Co.		France, 20	J. Watts
Italy, 5	Ralli Bros.	" 10	" 300	Anglo-Contl. G. Wks.		Germany, 2 cs.	Barker &
" 25	A. F. White & Co.	" 10	Belgium, 100	Sawer, Sons, & Co.		" 18	Burrell
E. Indies, 17 cks.	Ross & Deering	" 107	Picric Acid—			Holland, 2	G. Rahn
" 33	Cayzer, Irvine	Myrabolams	France, 36 pkgs.	Bailey & Leatham		Germany, 114	Colthart & H.
France, 29 brls.	Lucas & Spencer's	E. Indies, 725 pkgs.	Pitch—			Belgium, 16	Burrell
" 33	Wf. Ld.	" 1,300	N. Russia, 150 brls.	Fellows, Morton,		Spain, 44	W. Pope
Caustic Potash—		" 683	Plumbago—	& Co.		Wood Pulp—	
Belgium, 50 c.	Petri Bros.	Orchella	Germany, 49 cks.	B. Gallaway		Sweden, 600 lbs.	Henderson
Holland, 74	J. M. Steel & Co.	Ceylon, 32 pkgs.	Ceylon, 236 brls.	J. Thredder, Sen,		" 344	W. G. Taylor
France, 110	Thames S. T. &	Shumac	Germany, 44 cks.	Lenty & Co.		Norway, 478	"
" 110	L. Co., Ld.	Italy, 20 pkgs.	" 44	H. C. Everett		Denmark, 480	"
Chemicals (otherwise undescribed)		Tanner's Bark	Potash—			Norway, 540	E. J. & W. G.
Germany, 32 pkgs.	T. H. Lee	Natal, 185 t.	U. States, 115 c.	Charles & Fox		Sweden, 340	"
" 19	L. & I. D. Jt. Co.	" 130	Holland, 2,000	R. Waters		Germany, 524	"
" 19	T. Ronaldson	N. Z., 21	Potassium Carbonate—			Norway, 2,000	"
Holland, 6	Langstaff & Co.	Belgium, 53	Holland, 11 c.	Petri Bros.		Canada, 5,410	2,241 pkgs. E. J.
Belgium, 19	Major & Field	Germany, 19	France, 60	J. A. Reid		Sweden, 544	C. S.
Germany, 8	E. Merck	Turmeric	" 110	F. J. Puts & Co.		Holland, 550	Alloy
Holland, 20	Typke & King	E. Indies, 200 pkgs.	Germany, 100	Petri Bros.		Norway, 2,500 pkgs.	Morton Co.
" 21	Phillipps & Graves	Valonia	Potassium Sulphate—			Belgium, 1,051	W. E. B.
U. States, 50	Anderson, Weber	A. Turkey, 60 t.	France, 276 pkgs.	A. J. Smith		Zinc Oxide—	
Germany, 4	Phillipps & Graves	" 50	" 50	Charles & Fox		Germany, 150 brls.	M. Ash
Holland, 7	J. Barber & Co.	" 49	Germany, 208	Bessler, Waechter,		Holland, 207 pkgs.	"
Belgium, 5	T. Palmer	" 50	Pumice Stone—	& Co.		Germany, 100 cks.	"
N. Z., 19	A. Dawson	" 13	Italy, 1 t.	L. & I. Dk. Co.		LIVERPOOL	
Germany, 92	A & M Zimmermann	" 51	" 3	G. W. Lagen		<i>Week ending May 18th.</i>	
Cream of Tartar—		Farina—	" 15	Stobbs, Wilson, & Co.		Acetate of Lime—	
France, 10 pkgs.	G. F. Gerhardt	Holland, 100 pkgs.	Pyrates—			New York, 1,863 bgs.	
" 3	Evans, Lescher	" 200	Spain, 1,860 t.	Naylor, Benson,		Antimony Ore—	
" 10	W. C. Bacon & Co.	E. Indies, 124	Saltpetre—	& Co.		Antofagasta, 1,17 pkgs.	Kleinwort
Spain, 10	B. & F. Wf. Co.	Germany, 50	Germany, 52 cks.	C. Wimble & Co.		Asbestos—	
Holland, 63	Kirkpatrick & Co.	Holland, 100	" 213	P. Hecker & Co.		New York, 283 bgs.	
Dextrine—		Glucose—	" 10	L. & I. Dk. Co.		Barytes—	
Germany, 100 pkgs.	Herna & Co.	U. States, 100 pkgs.	" 40	J. Hall & Son		Bremen, 200 bgs.	
Dyestuffs—		" 505	E. Indies, 1,803	Lucas & Spencer's		Bone Ash—	
Annatto		" 505	Soapstone—	Wf. Co.		Campana, 124 bgs.	
E. Indies, 17 pkgs.	L. & I. D. Jt. Co.	Germany, 95	Germany, £85	C. Hof & Co.		Carbon Black—	
Denmark, 20	R. J. Fullwood & Co.	" 203	Sodium Acetate—			New York, 64 brls.	
Argols		" 25	Germany, 8 pkgs.	F. Boehm		Castor Oil—	
France, 5 pkgs.	B. & F. Wf. Co.	France, 200	Starch—			Calcutta, 250 cs.	
Italy, 271	Thames S. T. & L.	Farina—	Germany, 80 pkgs.	Phillipps & Graves		Chemicals (otherwise undescribed)	
" 2,040	B. Jacob & Sons	Holland, 100 pkgs.	Holland, 130	" Leach & Co.		Marseilles, 6 cks.	
Cochineal		" 100	" 471	Sawer, Sons, & Co.		Lisbon, 8 dem.	
Canaries, 28 pkgs.	G. S. Bruce	Germany, 95	Antimony Ore—			Rotterdam, 1	3 cs.
Gutch, 200 pkgs.	Leach & Co.	" 203	Asbestos—				
Rangoon, 200 pkgs.	A. Howden & Co.	" 25	Barytes—				
" 50	Brown & Elmslie	France, 200	Bone Ash—				
" 203	Arracan Co., Ld.	Farina—	Carbon Black—				

Ammonium Oxide— Rotterdam, 1 brl. Hamburg, 15 cks. Antwerp, 16 40 Rotterdam, 6 8 Seed Oil— New York, 60 brls. London, 333 Oil of Tartar— Seville, 1 brl. 2 cks. Resin— Antwerp, 4 bgs. Mohr & Muick 50 J. Burten & Co. 25 W. Slater 100 Blood— Panama, 136 bgs. Liverpool, 397 Garroballia— Antwerp, 372 bgs. Cockbain, Allardice & Co. Blanca, 535 G. D. Vaughan 564 & Co. Gols— Antwerp, 9 brls. M. D. Frangopulo & Co. Starch— Antwerp, 20 cs. Vi Divi Hacha, 154 t. Burg, 17 bgs. Tracts York, 100 bgs. 300 brls. Oak Extract Co., Ltd. aux. mbler, 275 cks. pore, 504 bgs. R. & J. Henderson rabolams ay, 330 bgs. E. D. Sassoon & Co. 650 A. Salmon & Co., Ltd. 290 A. Ewart & Co. Iron clia, 1 cs. Ac ions, 20 bgs. no, 980 meric ita, 251 bgs. Ralli Brs. 8 onia ia, 1,803 bgs. 10 t. C. G. Papayanni 130 bgs. C. I. Vander Veen & Co. ork 475 brls. 10 pls. 1 hf.-brl. A. Champion & Co. rk 200 bgs. 1 brl. Howard & Bulley Hamburg, 9 cks. Co-op. W'sale Society, Ltd. 4 5 cs. 1 es 1,813 bgs. Williamson Milligan one p, 1 cs. J. T. Fletcher & Co. ese Ore— uso, qty. 100, 1 000 6 cs. 10 brls. 22 cks. 47 Co-op. W'sale Society, Ltd. Acid— am, 3 cks. rk, 4 cks. L. Aspinall & Co. 60 brls. Anglo-Am. Oil Co.	Montreal, 17 20 kgs. W. W. Lester & Sons Phosphoric Acid— Bremen, 13 cks. Pitch— Amsterdam, 53 cks. Plumbago— New York, 1 cs. T. Robinson & Son Potashes— Rouen, 65 cks. Co-op. W'sale Societv Ltd. Montreal, 69 brls. Dunkirk, 22 dms. Pyrites— Huelva, 1,408 t. Matheson & Co. Rosin— New York, 1,274 brls. Wilmington, 5,303 Saltpetre— Hamburg, 2 cks. Calcutta, 642 bgs. Ralli Brs. Rotterdam, 170 Soap— Marseilles, 198 cs. Bari, 19 Boston, 2 J. Thompson New York, 1 W. Cuthbertson Evans, Sons Boston, 3 & Co. Soapstone— Genoa, 200 bgs. G. W. Huntriss & Co. Starch— New York, 610 bgs. Hamburg, 284 cs. Amsterdam, 40 bxs. J. T. Antwerp, 262 Fletcher & Co. Rotterdam, 180 Stearine— Boston, 100 tcs. Antwerp, 27 bgs. Sulphur Ore— Huelva, 1,448 t. Matheson & Co. Tallow— Alexandria, 4 cks. Campana, 600 Boston, 2 tcs. B. Ayres, 435 T. Bracht & Co. Tar— Rotterdam, 41 cks. Boston, 50 brls. A. Walford & Sons Tartar— Bordeaux, 38 cks. Tartaric Acid— Marseilles, 16 cks. 1 brl. Bordeaux, 4 Terra Alba— Larnaca, 50 bgs. Tincol— Calcutta, 103 bgs. Treacle— New York, 162 brls. Ultramarine— Hamburg, 5 cks. Rotterdam, 1 5 cs. Yarnish— New York, 5 brls. Waste Salt— Hamburg, 290 t. White Lead— Rotterdam, 27 cks. Wood Pulp— Portland, M., 710 bds. Spicer Brs. Montreal, 1,140 bds. A. Rice & Co. Rotterdam, 103 Zinc Oxide— Antwerp, 1 brl.	Chemicals (otherwise undescribed) Stockholm, 12 cks. Stott, Coker, & Co. Colours— Hamburg, 3 cs. 6 cks. Rotterdam, 40 18 118 brls. Ghent, 7 bxs. Antwerp, 16 2 Dyestuffs— Allzarine Rotterdam, 21 cks. 1 cs. Extracts Treport, 20 cks. Arnati & Harrison Rotterdam, 4 Fustic Hamburg, 869 lgs. qty. Farina— Hamburg, 1 100 bgs Rotterdam, 490 Glue— Treport, 10 cks. 30 bds. Arnati & Harrison Rotterdam, 4 40 bgs. Antwerp, 3 Lead Acetate— Rotterdam, 33 brls. Limestone— Antwerp, 2 cts. Pitch— Rotterdam, 12 cks. Potash— Treport, 21 dms. Arnati & Harrison Sodium Acetate— Treport, 13 cks. Arnati & Harrison Sodium Phosphate— Rotterdam, 13 cks. Starch— Rotterdam, 110 cs. Antwerp, 220 Sulphuric Acid— Rotterdam, 10 cks. Tannic Acid— Hamburg, 1 ck. Tartar Emetic— Hamburg, 2 cks. Tartaric Acid— Rotterdam, 9 cks. Tin Perchloride— Antwerp, 2 cks. Waste Salt— Hamburg, 750 bgs. qty. White Lead— Rotterdam, 13 cks. Wood Pulp— Rotterdam, 51 bds. Zinc Chloride— Rotterdam, 5 cks. Zinc Sulphate— Rotterdam, 15 brls. Zinc White— Rotterdam, 10 cks.	Colours— Amsterdam, 1 ck. W. & C. L. Ringrose Rotterdam, 46 pks. Antwerp, 6 cks. Bailey & Leatham " 19 pks. Wilson, Sons, & Co., Ltd. Rotterdam, 8 cks. 9 pks. Hutchinson & Son Hamburg, 18 pks. G. Malcolm & Son Stettin, 24 cks. Wilson, Sons, & Co., Ltd. Dextrine— Stettin, 220 bgs. Wilson, Sons, & Co., Ltd. Dyestuffs— Allzarine Rotterdam, 59 pks. 23 brls. Hutchinson & Son " 42 cks. W. & C. L. Ringrose Madder Rotterdam, 1 ck. Hutchinson & Son Farina— Ghent, 502 cs. Wilson, Sons, & Co., Ltd. Stettin, 100 bgs. Hamburg, 100 Glucose— Stettin, 300 bgs. Wilson, Sons, & Co., Ltd. New York, 500 brls. Glue— Hamburg, 20 bgs. G. P. Lawson Stettin, 50 bds. Rouen, 36 cks. Rawson & Robinson Manure— Ghent, 1,810 bgs. 202 t. Wilson, Sons, & Co., Ltd. Naphthalene— Stettin, 84 cks. Wilson, Sons, & Co., Ltd. Potash— Rotterdam, 2 cks. W. & C. L. Ringrose Saltpetre— Rotterdam, 4 brls. 125 bgs. Hutchinson & Son Soda— Rotterdam, 12 cks. Hutchinson & Son Starch— Antwerp, 280 cs. Bailey & Leatham Rotterdam, 261 Hutchinson & Son Tartar— Bordeaux, 4 cks. Rawson & Robinson Tartaric Acid— Rotterdam, 2 cks. W. & C. L. Ringrose Treacle— New York, 415 brls. Wilson, Sons, & Co., Ltd. Ultramarine— Rotterdam, 5 cks. W. & C. L. Ringrose Waste Salt— Hamburg, 94 bgs. Wilson, Sons, & Co., Ltd. " qty. Bailey & Leatham White Lead— Antwerp, 14 cks. Bailey & Leatham Rotterdam, 75 Hutchinson & Son " 30 W. & C. L. Ringrose Wolfram— Hamburg, 5 cs. Wilson, Sons, & Co., Ltd. Wood Pulp— Halmstad, 3,547 bds. G. H. Haller Helsingfors, 46 Furley & Co. 196 Zinc Oxide— Antwerp, 100 cks. Bailey & Leatham
--	---	---	---

HULL.

Week ending May 18th.

Acetate—	New York, 2,953 bgs.	Wilson, Sons, & Co., Ltd.
Acid—	Rotterdam, 27 blns.	W. & C. L. Ringrose Hutchinson & Son
"	1 ck.	Hutchinson & Son
Barytes—	Antwerp, 200 bgs. 12 cks.	Bailey & Leatham & Son
"	Rotterdam, 50 36	Hutchinson & Son
Caoutchouc—	Amsterdam, 1 cs.	W. & C. L. Ringrose
Caustic Soda—	Hango, 6 cs.	J. Good & Sons
Chemicals (otherwise undescribed)	Hamburg, 17 cks. 7 pks.	Wilson, Sons, & Co., Ltd.
Stettin,	15	"
Cod Oil—	Christiansund, 28 brls.	Wilson, Sons, & Co., Ltd.
Aalesund,	96	"
Bergen,	28	"

GLASGOW.

Week ending May 23rd.

Acetone—	Rotterdam, 4 cks.	J. Rankine & Son
----------	-------------------	---------------------

Am Chlorate—			
ck, 5 t. 8 c.	£250		
OS—			
2 t. 1	£90		
e—			
1 t.	£23		
am, 1	23		
12	24		
aneiro, 9	303		
egre, 12	235		
2	15		
2	63		
8	50		
19	223		
lp—			
1 t. 4 c.	£61		
118 drs. 120			
2	125		
wn, 2	13		
1,000 CS. 12	5	3,610	
	110	25	
2 t. 16 c.	£36		
2	14		
5 t. 1 c.	£18		
2	10		
1	11		
ystals—			
wn, 5 t. 6 c.	£14		
Bicarbonate			
ne, 5 t. 13 c.	£28		
2	6	25	
Prussiate—			
10 cks.	£153		
ide—			
122 t.	£122		
5 t.	£27		
100 brls.	69		
30	20		
wn, 13	8 c.	159	
lay, 600 kgs.		267	
ic Acid—			
20 cs.	£11		
osphate—			
ue, 33 t.	£132		
cs, 54	3 c.	212	
ic Acid—			
5 c.	£23		
3	5	310	
VERPOOL.			
ck ending May 22nd.			
1, O., 3 t.	£21		
15	5 c.	105	
4	15	3 q.	26
2	1	9	
1, O., 20	13	3	
1	1	92	
1	6	7	
32	3	152	
6	5	20	
ia (Liquid)—			
4 c. 1 q.	£25		
ium Carbonate—			
4 c.	£7		
ia, 1 t.	1 q.	35	
3	5		
ium Chloride—			
la, 2 c. 2 q.	£6		
1 t.	35		
5	6		
5	4	124	
phia, 27	18	763	
3	5		
4	7		
ium Sulphate—			
50 t. 12 c. 1 q.	£506		
10	2	100	
ary, 20	10	3	206
mas, 18	4	215	
phia, 15	15	174	
t News, 50		524	
314	13	3,320	
ium Sulphocyanide—			
2 c. 2 q.	£8		
ny—			
2 cks.			
6 c.			
Composition—			
4 cs.			

Bleaching Powder—			
Baltimore, 58 cks.		23 cs.	
Bombay, 467		125	
Boston, 62		30 brls.	
Calcutta, 20			
Genoa, 17			
Konigsberg, 43			
Leghorn, 148			
Naples, 320		110	
Newport News, 15			
New York, 320		110	
Pasages, 10			
Pernambuco, 48			
Vera Cruz, 1			
Boracic Acid—			
Melbourne, 3 t. 10 c.	£110		
Havre, 1	3 q.	32	
Borate of Lime—			
Fiume, 58 t.	£650		
Borax—			
Melbourne, 2 t.	£40		
B. Ayres, 6	2 c.	3 q.	123
Montreal, 10	1	201	
Copenhagen, 5	4	104	
Hamburg, 36	1	3	722
Valparaiso, 3	17	3	73
Peterbro', Ont., 5	12	107	
Patras, 4		4	
Rotterdam, 10	16	3	217
Ibraill, 15		14	
Galatz, 1		19	
Calined Magnesia—			
Tunis, 5 tcs			
Calcium Chloride—			
Melbourne, 9 t. 11 c.	2 q.	£23	
Camphor—			
Ponce, 1 ck.			
Carbolic Acid—			
Newport News, 45 cks.		£312	
Odessa, 6 c.	2 q.	57	
Milan, 1 t.		111	
Rio de Janeiro, 3	2	53	
Hamburg, 1	2	145	
New York, 10 cs. 1	2	1	145
12 brls. 5 cks.			
Yokohama, 10	17	585	
Hiogo, 18	2	46	
Vera Cruz, 5		20	
Montreal, 1 cs.		6	
Castor Oil—			
Oporto, 3 cks.			
Caustic Soda—			
Adelaide, 39 dms.			
Aracaju, 10			
Bahia, 63			
Baltimore, 300			
Barcelona, 120	60 brls.		
Bilbao, 14			
Rombay, 8	2 cks.		
Bordeaux, 10			
Boston, 317	5		
Calcutta, 20			
Corunna, 14	20		
Dunedin, 14			
Galatz, 40			
Gefle, 14			
Genoa, 45	27		
Ghent, 45			
Hamburg, 45			
Havana, 44			
Havre, 15			
Hiogo, 102			
Honolulu, 25			
Malaga, 30			
Melbourne, 16	4 crts. 5 cs.		
Monterey, 36			
Montreal, 30			
Nagasaki, 100			
Naples, 50			
N. Orleans, 152			
Newport News, 290			
New York, 470	40 brls.		
Odessa, 250			
Oporto, 95			
Para, 30			
Pernambuco, 105			
Quebec, 5			
Rangoon, 800 bxs.			
Rio de Janeiro, 32			
Rosario, 70			
Rouen, 10			
St. Catharina, 35			
Saltillo, 25			
San Francisco, 30			
San Sebastian, 254			
Seville, 39			
Shanghai, 39	22 pkgs.		
Sydney, 39			
Talcahuano, 200			
Tampico, 25			
Tarragona, 30			
Trieste, 30			
Valencia, 95			
Valparaiso, 12			

Vera Cruz, 87			
Volo, 30			
Chemicals (otherwise undescribed)			
Odessa, 6 t. 5 c.	£208		
Christiania, 6	11		
Philadelphia, 12	16	425	
China Clay—			
Baltimore, 95 t.			
Boston, 1,279			
Calcutta, 26	10 c.		
Halifax, 10			
Naples, 20			
Chloroform—			
Vera Cruz, 1 cs.			
Citric Acid—			
Piræus, 1 c.	£6		
Sydney, 5	32		
Bonice, 1	8		
Coal Products—			
Aniline Colours			
Rio de Janeiro, 8 cs.			
Aniline Oil			
St. Nazaire, 2 dms.			
Aniline Salts			
Rio de Janeiro, 4 cks.			
St. Nazaire, 5			
Cresote Oil			
Bordeaux, 50 cks.			
Lisbon, 500 brls.			
Naphthaline Colours			
New York, 3 cks.			
Pitch			
Cette, 1,250 t.			
Ibraill, 15 brls.			
Rouen, 2 cks.			
St. Malo, 330			
Tar			
Galatz, 50 brls.			
Ibraill, 10			
Coal Tar Products (otherwise undescribed)—			
New York, 25 cks. 1 kg. 18 brls.			
Copper Sulphate—			
Rio de Janeiro, 1 t. 6 c.	£21		
Bordeaux, 546	19	8,821	
Nantes, 28	8	1 q.	430
Rouen, 39	16	505	
Melbourne, 10		160	
Genoa, 17	12	267	
Venice, 9	19	150	
Syria, 9	1	7	
Naples, 5	1	76	
Marseilles, 7	6	98	
Valencia, 10		143	
Vigo, 5	1	73	
Talcahuano, 4	4	59	
Barcelona, 25	5	390	
Oporto, 40	7	625	
Seville, 4	19	78	
Lisbon, 67	9	1,046	
Mexico City, 10	1	156	
Tarragona, 12	11	180	
Disinfectants—			
Montreal, 2 cks.	£8		
Yokohama, 7 t.	266		
Dried Blood—			
Gd. Canary, 15 t. 5 c.	2 q.	£126	
Aruca, 4	7	34	
Las Palmas, 10		81	
French Chalk—			
Montreal, 5 brls.			
Glue—			
Barcelona, 18 cks.			
New York, 30	30 bgs.		
Gypsum—			
Hamburg, 2 t. 11 c.	3 q.	£6	
New York, 35	5	113	
Iron Liquor—			
Lisbon, 1 t. 10 c.	£168		
Iron Oxide—			
Genoa, 5 t. 6 c.	£40		
Iron Sulphate—			
Rio de Janeiro, 1 t. 4 c.	£2		
Litharge—			
Philadelphia, 20 cks.			
Magnesia—			
Barcelona, 4 cs.			
Malaga, 4			
New York, 1 ck.			
Magnesium Chloride—			
Genoa, 2 t. 11 c.	£6		
Magnesium Sulphate—			
New York, 1 ck. 77 kgs.			
Manganese Borate—			
St. Petersburg, 6 c.	1 q.	£17	
Manganese Sulphate—			
St. Petersburg, 1 t. 19 c.	3 q.	£41	
Manure—			
Stockholm, 7 t. 18 c.	1 q.	£64	
Havre, 50	3	140	

Nitric Acid—			
Rio Grande, 1 c. 1 q.	£—		
Ochre—			
Nantes, 28 cks.			
Paint—			
Algoa Bay, 1 ck.			
Antwerp, 15 dms.	15 kgs. 12 brls.		
Appam, 12			
Be guella, 20			
Bermuda, 40			
Bilbao, 1			
Bonny, 2			
Bordeaux, 8	3		
Braila, 4	80		
B. Ayres, 20			
Cadiz, 3			
Cartagena, N G., 5			
Galatz, 12 dms.			
Gibraltar, 2	17		
Hamburg, 10	70		
Havana, 8	4		
Hiogo, 8			
Ilo Ilo, 125			
Iquitos, 2			
Jaffa, 3			
Lagos, 2			
Lisbon, 44	2		
Manaos, 5 cs. 74	70	36 pkgs.	
Montreal, 5		11 brls.	
New York, 11			
Opobo, 12			
Para, 2			
Pisco, 10			
Praia, 6	50		
Punta Arenas, 1 cs.			
Rotterdam, 7 dms.			
St. Domingo, 19			
St. Thomas, 12			
Savanna, 4			
Tampico, 3 cs.			
Valparaiso, 7	250		
Yokohama, 80 dms.			
Painters' Colours—			
Alexandria, 20 cks.			
Bahia, 35 kgs.			
Barcelona, 8			
Bilbao, 20			
Bremen, 100 bgs.			
Calcutta, 12 brls.	9		
Cape Town, 1	1 cs.		
Colon, 13			
Constantinople, 435			
Gothenburg, 175			
Guayaquil, 20			
Hamburg, 35			
Havana, 7 tcs.			
Hong Kong, 25			
Honolulu, 1 brl.			
Iquique, 2	3	58 cs.	
Manaos, 2			
Montreal, 5	18	98	26
54 dms. 1 bx.			
N. Orleans, 13 brls.			
New York, 150	38		
Odessa, 185			
Para, 10			
Pernambuco, 76			
Pt. Said, 41			
Rotterdam, 29			
Valparaiso, 25 brls.			
Vera Cruz, 10 hf.-brls. 100			
Paraffin Wax—			
New York, 7 cs.			
Rio de Janeiro, 4			
Smyrna, 5 bgs.			
Phosphorus—			
Pernambuco, 3 c.	£43		
La Guayra, 2	20		
Hiogo, 1 t. 15	445		
Picric Acid—			
New York, 8 cks.	£90		
Plumbago—			
Bilbao, 1 ck.			
Rosario, 6			
Vigo, 1			
Potassium Bichromate—			
Rio de Janeiro, 19 c. 1 q.	£44		
Constantinople, 5	2	12	
St. Nazaire, 1 t.	3	47	
Calcutta, 8		29	
Potassium Carbonate—			
New York, 9 t. 9 c.	£171		
Potassium Chlorate—			
Yokohama, 7 t. 10 c.	£358		

Venice, 1 2 50	Quebec, 1	Lisbon, 100	Glue—
Hiogo, 12 10 644	Rangoon, 500 600	Melbourne, 150	Bremerhaven, 20 cks.
Copenhagen, 9 400	Rotterdam, 20	Nantes, 64 pkgs. 15	Rotterdam, 2
Sydney, 13 540	St. Lucia, 20	Newport News, 875	Linseed Oil—
Vera Cruz, 11 11	St. Thomas, 475	New York, 101 150 167	Alexandria, 10 brls.
Genoa, 1 40	San Fernando, 300	Palermo, 200 1	Manure—
New York, 36 5 1,569	Sapeli, 100	Paris, 200	Rotterdam, 5 cks.
Potassium Prussiate—	Seville, 1	Piraeus, 66	Painters' Colours—
Rio de Janeiro, 5 c. £22	Shanghai, 2,127	Ponce, 2	Rotterdam, 2 cks.
Potassium Silicate—	Sherbro, 20 1	Rostock, 2	Paraffin Wax—
Amsterdam, 1 t. 4 c. 2 q. £6	Sierra Leone, 250	Rotterdam, 50 12	Barcelona, 60 kgs.
Rosin—	Singapore, 350	Rouen, 302 pkgs.	Salammoniac—
Hamburg, 5 brls.	Teneriffe, 1,054	St. Petersburg, 150	Tunis, 5 brls.
Salt—	Trinidad, 300	San Francisco, 200	Soap—
Akassa, 603 t.	Ukaka, 60	Singapore, 15	Malta, 40 box.
Algoa Bay, 5	Volo, 124	Smyrna, 70	Varnish—
Antwerp, 25	Warri, 100	Sydney, 210 30	Bombay, 10 dms.
Baltimore, 317	Soda—	Townsville, 100	Zinc Chloride—
Bonny, 152	Arica, 12 kgs.	Trieste, 40	Bombay, 51 cks.
Boston, 330	Soda Alkali—	Valencia, 50	
H. Ayres, 112 4 c.	Adelaide, 20 cks.	Varna, 20	
Calcutta, 11 057	Barcelona, 30 70 brls.	Sodium Chlorate—	
Cameroon, 100 19	Bilbao, 16 35	Boston, 100 kgs.	
Christiania, 88 15	Genoa, 67	New York, 100	
Copenhagen, 113	La Guayra, 4 25	Philadelphia, 100	
Halifax, 967	Leghorn, 95 32	Vera Cruz, 20	
Kingston, Jam., 25	Lisbon, 95	Sodium Silicate—	
Lagos, 140	Malta, 72	Bombay, 5 brls.	
Landana, 5	Melbourne, 72	Havre, 10	
Manila, 71 13	Montreal, 20	Malta, 12	
Maradi, 26 15	Oporto, 15	Oporto, 18	
Montreal, 999 11	Savannah, 6	Vigo, 3	
Mucilla, 5	Sydney, 54	Sodium Sulphate—	
Musiera, 5	Syria, 20	Vigo, 1 brl.	
N. Castle, NSW, 400	Valencia, 82	Starch—	
Newfairwater, 250	Volo, 10	Sundswall, 40 cs.	
Newport News, 200	Soda Ash—	Sulphur—	
New York, 10	Algoa Bay, 20 kgs.	Boston, 300 t. 6 c. £977	
Nogai, 68 14	Antwerp, 2 cks. 50 bgs.	Philadelphia, 195 2 407	
Old Calabar, 20	Baltimore, 21 6,644 385 tcs	New York, 8 8	
Rotterdam, 120	Boston, 167 1,200 68	Cape Town, 1 0	
Shediac, 268	B. Ayres, 39 235 kgs. 200 brls.	Sulphuric Acid—	
Sierra Leone, 200	Callao, 50 bgs.	Porto Alegre, 17 c. 2 q. £—	
Valparaiso, 126 13	Christiania, 24	Rio de Janeiro, 3 13	
Wallich Bay, 30	Cheribon, 8 60	Superphosphate—	
Westrick, 251	Copenhagen, 50	Valencia, 125 t. £283	
Wyborg, 208	Ghent, 50	Las Palmas, 64 223	
Salt Cake—	Gothenburg, 10 400	Tartaric Acid—	
New York, 31 13 c. £75	Hamburg, 10 150 25	Ponce, 20 £11	
Newport News, 76 14 68	Hiogo, 82	Santander, 2 1 q. 12	
Baltimore, 200 12 300	Montreal, 20	Treacle—	
Philadelphia, 154 8 239	Newport News, 1,707	Accra, 15 cs.	
Saltpetre—	New York, 198 6,364 371 tcs.	Amsterdam, 15 brls.	
Vigo, 17 c. 1 q. £17	Patras, 10 brls.	Antwerp, 25 tcs. 45 hf. pns.	
Gal. Canary, 3 t. 15 1 85	Philadelphia, 175 2,662 132	Christiania, 120	
Almeria, 1 1 32	Riga, 30	Gothenburg, 25	
Callao, 1 13 1 38	Rio de Janeiro, 25 100 brls.	Rotterdam, 65	
Rio de Janeiro, 5 5 3 139	St. Petersburg, 196	Terneuzen, 35	
Sheep Dip—	San Francisco, 54	Turpentine—	
Punta Arenas, 1 t. 2 c. 2 q. £121	Singapore, 10	Benguella, 50 dms.	
Valparaiso, 8 18 2 250	Smyrna, 50	Calcutta, 20	
Slag—	Sourabaya, 20	Genoa, 6 brls.	
Sydney, 200 bgs.	Sydney, 505	Manaoa, 10	
Soap—	Tampico, 20	Punta Arenas, 16	
Accra, 200 box.	Toronto, 16 50	Rotterdam, 5	
Alexandria, 200	Yokohama, 5	Yarnish—	
Algoa Bay, 950	Soda Crystals—	Barcelona, 12 cks 2 cs.	
Ambroint, 200	Alexandria, 50 brls.	Benguella, 4	
Amsterdam, 95	Bombay, 270 kgs. 50 bgs.	Boston, 4 6 dms.	
Antigua, 150	Boston, 280 200	B. Ayres, 2	
Antwerp, 5	Halifax, 60	Genoa, 6 brls.	
Barbodes, 200	Honolulu, 25	Iquique, 6	
Bombay, 550 200	Iquique, 400	Manila, 10	
Bordeaux, 625	New York, 50	Newport News, 4	
Bonny, 100	Pt. Said, 2 4	Pt. Said, 4	
Bordeaux, 625	Seville, 12 4	Rio de Janeiro, 2	
Cabinda, 100 5	Sierra Leone, 5 brls.	Seville, 2	
Calcutta, 22 250 brls.	Valparaiso, 37	Sierra Leone, 5 brls.	
Cameroon, 225	Sodium Bicarbonate—	Valparaiso, 37	
Canaria, 450	Alexandria, 20 kgs. 30 brls.	Verdigris—	
C. C. Castle, 100	Antwerp, 201 20 cks.	Calcutta, 3 cks.	
Cape Town, 147	Bahia, 30	White Lead—	
Christiania, 20 300	Baltimore, 50 75	B. Ayres, 4 cks.	
Coracao, 54	Barcelona, 465		
Durban, 100	Beyrout, 30 5	MANCHESTER.	
E. London, 1,335	Bilbao, 70	Week ending May 21st.	
Gaboon, 125	Bordeaux, 65 200	Alum—	
Genoa, 100	Bourgas, 101 50	Alexandria, 20 brls.	
Gibraltar, 200	Braila, 50	Aniline Colours—	
Guayaquil, 900	Calcutta, 50	Rotterdam, 2 cks.	
Iquique, 5	Constantinople, 20	Asbestos—	
Kingston, Ja., 1,160	Copenhagen, 72 15	Bombay, 5 cks.	
Kurrachee, 101	Genoa, 90 9	Caoutchouc—	
Lagos, 160	Halifax, 25 10	Rotterdam, 1 cs.	
Las Palmas, 940	Havre, 118	Carbolic Acid—	
Madras, 20	Hiogo, 520	Rotterdam, 50 cks.	
Manaoa, 270	Honolulu, 10	Chemicals (otherwise undescribed)	
Montreal, 2	Ibrail, 50	Antwerp, 1 kg.	
New York, 300 28		Copperas—	
Old Calabar, 1,012		Alexandria, 15 brls.	
Opobo, 1,500			
Palermo, 1			
Para, 400			
Patras, 1,166			
Pt. Elizabeth, 1,666			
Pt. Natal, 2,100 11			

HULL.

Week ending May 18th.

Alkali—	
Bombay, 120 cks.	
Kurrachee, 100	
Trieste, 42 10 dms.	
Ammonium Sulphate—	
Ghent, 33 bgs.	
Stettin, 500	
St. Petersburg, 198	
Asbestos—	
Bremen, 5 cs.	
Bleaching Powder—	
Boston, 113 cks.	
Danzig, 40	
Fiume, 25	
Genoa, 57	
Hango, 41	
Leghorn, 13	
Stettin, 110	
Trieste, 2	
Borax—	
Helsingfors, 1 ck.	
Caoutchouc—	
Catania, 1 cs.	
Carbolic Acid—	
Amsterdam, 10 brls.	
Caustic Soda—	
Abo, 20 cks. 2 cs.	
Danzig, 33 dms.	
Helsingfors, 9	
Antwerp, 8	
Chemicals (otherwise undescribed)	
Abo, 53 cks.	
Bari, 28 kgs.	
Bombay, 50	
Copenhagen, 20	
Christiania, 203 lbs.	
Danzig, 194 cks.	
Fiume, 50	
Harlingen, 45	
Hamburg, 2	
Helsingfors, 2	
Hango, 7	
Kurrachee, 150 134 pks.	
Leghorn, 2	
Naples, 23 48	
New York, 5 5	
Rotterdam, 25	
Reval, 1	
Rouen, 2	
St. Petersburg, 10 22	
Trieste, 16	
Amsterdam, 20 kgs.	
Antwerp, 2	
China Clay—	
Bremen, 4 cks.	
Cottonseed Oil—	
Bari, 20 c.	
Bremen, 740	
Gothenburg, 52	
Hamburg, 1,053	
Rotterdam, 1,252	
Stettin, 704	
Stavanger, 40	
Amsterdam, 20	
Antwerp, 182	
Dyestuffs (otherwise undescribed)	
Bari, 1 ck.	
Danzig, 1 cs.	
Glue—	
Abo, 2 ck. 1 cs.	
Hamburg, 1	
Hango, 2	

Oil—

41 c.	
22	
489	
77	
35	
1,043	
49	
60	
21	
430	
60	
210	
324	
316	
115	
1 ck.	
9	
1 cs.	
12 cks.	
25 cks.	
50	40 dms 50 pkgs.
2	1 31
34	4 201 cs.
3	1
53	20 61 pks.
17	125
5	50
20	25 pkgs.
17	
15	80
783	23 8 cs.
40	
50	8
7	20 pks.
4	2 cs.
17	50
272	17 30
11	
9	1
1	36 7
25 bgs	
25	
309 cks.	
303 t.	
458 t.	
270 t.	
280	
1 cs.	
2	
1	
5	
13	
215 cs.	
50	10 bgs. 25 pks
1 ck.	
5 cks.	
40	
33	
135 cks.	
20	
5	
5	
100	
3	
4 cs.	
115 t.	
3	
25 cks.	
30 cks. 2 cs.	
1	1 pke.
2	
4	3 dms.
2	
2	
3 bxs.	
4	
12	
1	
2	7
6 cks.	

GLASGOW.

Week ending May 23rd.

Alkali—	
Queensland,	£24
Ammonium Sulphate—	
Barbadoes,	25 t. 14 c.
Trinidad,	4 14
Barbadoes,	40 14
Canada,	1,780
Demerara,	144
Trinidad,	
Valencia,	373 15½
Bleaching Powder—	
Canada,	£160
U.S.A.,	40
Bone Meal—	
Barbadoes,	49 t. 13 c.
Caustic Soda—	
Brisbane,	£77
Coal Products—	
Creosote	£292
Russia,	
Creosote Oil	£575
France,	
Naphtha	£65
France,	
Pitch	£1,714
France,	
Amsterdam,	19 t.
Antwerp,	191 19 c.
Canada,	
Russia,	479
Tar	85
Bombay,	£40
Christiania,	30 brls.
Rangoon,	
Russia,	35
U.S.A.,	280
Cottonseed Oil—	
Manila,	2 t. 8 c.
Dyestuffs—	
Extracts	£265
Canada,	
Glucose—	
Canada,	1 t.
Guano—	
Kingston, Jam.,	25 t. 1 c.
Barbadoes,	25 t.
Iodine—	
Rotterdam,	£34
Iron Liquor—	
Christiania,	2 t.
Lamp Black—	
Canada,	£32
Linseed Oil—	
Natal,	1 t. 6½ c.
Alexandria,	3 9½
Beyrout,	2 6½
Brisbane,	1 10
Cairo,	1 4
Queensland,	5 4
Jamaica,	2 2
Manila,	4 4
Litharge—	
Calcutta,	£20
Magnesium Sulphate—	
Brisbane,	£31
Manganese—	
Basle,	11 t. 10 c.
Manganese Oxide—	
U.S.A.,	£110
Manure—	
Barbadoes,	26 t.
Kingston, Jam.,	14
Valencia,	250 7¼ c.
Paint—	
Algoa Bay,	£34
Cape Town,	70
Curacao,	70
E. London,	77
Alexandria,	272
Beyrout,	40
Bombay,	98
Cairo,	15
M. Video,	37
Rangoon,	84
Talcahuano,	40
Valparaiso,	23
Fremantle,	60
Havana,	62
Jamaica,	1 t. 2¼ c.
Painters' Colours—	
Bombay,	£100
Trinidad,	96
Rotterdam,	159
Pt. Elizabeth,	34
Calcutta,	235
Montreal,	25

Paraffin Wax—

King William's Town,	£71
Antwerp,	22
Bordeaux,	110
Cape Town,	110
Leghorn,	3 t. 10 c.
Potash Salts—	
Barranquilla,	£331
Potassium Bichromate—	
Rotterdam,	£348
B. Ayres,	45
Genoa,	378
Barcelona,	604
Montreal,	222
Potassium Cyanide—	
Fremantle,	£244
Potassium Prussiate—	
New York,	£535
Rosin Oil—	
Amsterdam,	£61
Salt—	
Demerara,	95 t.
Soap—	
Algoa Bay,	2 t. 14½ c.
Black River, Ja.,	1 5
Antigua,	2 10
Jamaica,	1 7½
Sodium Bichromate—	
Rotterdam,	£40
Antwerp,	174
Genoa,	223
Barcelona,	165
Montreal,	173
Starch—	
Brisbane,	1 t.
Fremantle,	1
Sulphuric Acid—	
Rangoon,	£340
Superphosphate—	
Demerara,	£32
Tallow—	
Rangoon,	2 t. 11 c.
Tartar—	
Windsor, Ont.,	£26
Treacle—	
E. London,	£26
Christiania,	20 t. 12 c.
Bergen,	6 17
Drontheim,	6 14
White Lead—	
Cape Town,	£150
Brisbane,	45
Transvaal,	46

TYNE.

Week ending May 18th.

Alkali—	
Antwerp,	11 t. 2 c.
Christiania,	50 11
Rotterdam,	3 12
Amsterdam,	39 18
St. Petersburg,	106 3
Gothenburg,	5 6
Ammonia—	
Stockholm,	5 t. 1 c.
Aarhus,	1 8
Ammonium Chloride—	
St. Petersburg,	4 t. 8 c.
Antimony—	
Rotterdam,	10 c.
St. Petersburg,	10 t.
Arsenic—	
St. Petersburg,	25 t. 6 c.
Gothenburg,	2 15
Barium Binoxide—	
Dunkirk,	10 t.
Barytes—	
Hamburg,	5 t.
St. Petersburg,	10
Bleaching Powder—	
Hamburg,	132 t. 15 c.
Stockholm,	30 2
Bergen,	1 4
Odense,	3 13
Smyrna,	5 1
Rotterdam,	14 12
Copenhagen,	11 6
Drontheim,	9 19
Amsterdam,	18 3
Lisbon,	25 2
Gothenburg,	25 7
Antwerp,	54 2
St. Petersburg,	595 6

Caustic Soda—

Hamburg,	5 t. 4 c.
Stockholm,	82 5
Smyrna,	2 12
Antwerp,	7 2
St. Petersburg,	24 10
Genoa,	9 10
Copenhagen,	22 28
Amsterdam,	16 5
Gothenburg,	59 4
Litharge—	
Stockholm,	3 t. 18 c.
Dunkirk,	2 2
Magnesia—	
Hamburg,	1 c.
St. Petersburg,	15
Paint—	
Antwerp,	1 t.
Stockholm,	6 c.
Copenhagen,	1
Slag—	
Rotterdam,	69 t.
Soda—	
Antwerp,	10 t. 1 c.
Stockholm,	24 2
Christiania,	10
Horsens,	25 15
Smyrna,	8 3
Rotterdam,	10 4
Genoa,	7 9
Drontheim,	10
Amsterdam,	35 15
Gothenburg,	10 2
Soda Ash—	
Stockholm,	15 t. 5 c.
Hamburg,	10 8
Lisbon,	10 8
Gothenburg,	16 13
Sodium Sulphate—	
Amsterdam,	50 t.
St. Petersburg,	10 3
Sulphur—	
Stockholm,	50 t.
Drammen,	150
Amsterdam,	2
Gothenburg,	13
Superphosphate—	
Laurvig,	15 t.
Tallow—	
Genoa,	1 t. 7 c.
Pozzuoli,	1
White Lead—	
St. Petersburg,	5 t. 1 c.
Copenhagen,	4 12

GOOLE.

Week ending May 15th.

Benzol—	
Boulogne,	48 cks.
Hamburg,	96
Rotterdam,	49
Chemicals (otherwise undes.)—	
Boulogne,	2 cs.
Bruges,	1 1 ck.
Ghent,	2
Rotterdam,	4
Coal Products (otherwise undes.)—	
Antwerp,	9 cks.
Boulogne,	11 7 cs.
Dyestuffs (otherwise undescribed.)	
Ghent,	3 cks.
Manure—	
Boulogne,	26 bgs.
Rotterdam,	200
Painters' Colours—	
Boulogne,	6 tins.
Pitch—	
Antwerp,	1,250 t.

GRIMSBY.

Week ending May 18th.

Chemicals (otherwise undescribed)	
Dieppe,	3 cks.
Hamburg,	57 11 cs. 9 pkgs.
Coal Products (otherwise undes.)—	
Dieppe,	184 cks. 3 cs.
Rotterdam,	102
Dyestuffs (otherwise undescribed)	
Dieppe,	1 ck.
Manure—	
Antwerp,	62 t.
Painters' Colours—	
Dieppe,	10 cks.
Malmö,	10

PRICES CURRENT.

WEDNESDAY, MAY 29TH, 1900.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

stated are F.O.B. at maker's works, or at usual ports of shipment in U.K. The price in different localities may

	£	s.	d.			
7, and 40 %	per cwt.	6/3	& 9/3	Lime, Acetate (brown)	per ton	5 1
acial	"	40/-		" (grey)	"	8 1
2, 2000°	"	0 15	0	Magnesium (ribbon and wire)	per oz.	0
"	per lb.	0 0	3 1/2	" Chloride (ex ship)	per ton	2
Lower Salts, 30° Tw.	per bottle	0 0	10	" Carbonate	per cwt.	1 1/2
Cylinder, 30° Tw.	"	0 3	0	" Hydrate	per ton	17
Tw.	per lb.	0 0	1 1/2	" Sulphate (Epsom Salts)	per ton	3
"	"	0 0	1 1/2	Manganese, Sulphate	"	17
"	nett	0 0	3 1/2	" Borate	per cwt.	2 1/2
1750°	"	0 1	1	" Ore, 70 %	per ton	4
"	"	0 0	10	Methylated Spirit, 61° O.P.	per gallon	0
burning 50 %	per ton	15	10 0	Naphtha (Wood), Solvent	"	0
monohydrate)	"	5	10 0	" Miscible, 60° O.P.	"	0
Pyrites, 168°	"	3	0 0	Oils:—		
" 150°	"	1	5 0	Cotton-seed	per ton	18 1/2
free from arsenic, 145°	"	1	6 0	Linseed	"	22
(solution) S.G. 1005	"	3	0 0	Petroleum, American	per gallon	0
"	per lb.	0 0	1 0	Stearine	per ton	25
"	"	0 0	10 1/2	Phosphorus (yellow)	per lb.	0
powdered	nett per ton	14	17 6	" (red)	"	0
amp)	"	4	12 6	Potassium (metal)	per oz.	0
hate (pure)	"	4	12 6	" Bichromate	per lb.	0
"	"	2	7 6	" Carbonate, 90% (ex ship)	per ton	16 1/2
"	per lb.	0 2	10	" Chlorate	per lb.	0
hydrous	"	0 1	3	" Cyanide, 98%	"	0
28°	per lb.	0 0	3	" Hydrate (Caustic Potash) 80/85 %	per ton	21
24°	"	0 0	2 1/2	" (Caustic Potash) 75/80 %	"	19 1/2
chlorate	nett	0 0	3 1/2	" (Caustic Potash) 70/75 %	"	19 1/2
mate	per cwt.	21	10 0	" Nitrate (refined)	per cwt.	1
(sub-arsenical) net & anal	per cwt.	21	10 0	" Permanganate	per cwt.	2 1/2
mate	per lb.	0 0	8 1/2	" Prussiate Yellow	per lb.	0
mate	per lb.	0 0	8 1/2	" Sulphate, 90 % (ex ship)	per ton	9 1/2
mate (grey) London	per lb.	0 0	8 1/2	" Muriate, 80 % (do.)	"	8 1/2
mate (grey)	per lb.	0 0	8 1/2	Silver (metal)	per oz.	0
mate	per lb.	0 0	8 1/2	" Nitrate	"	0
mate	per lb.	0 0	8 1/2	Sodium (metal)	per lb.	0
mate	per lb.	0 0	8 1/2	" Carb. (refined Soda-ash) 48 %	per ton	4 1/2
mate	per lb.	0 0	8 1/2	" (Caustic Soda-ash) 48 %	"	3 1/2
mate	per lb.	0 0	8 1/2	" (Carb. Soda-ash) 48 %	"	3 1/2
mate	per lb.	0 0	8 1/2	" (Alkali) 58 %	"	3 1/2
mate	per lb.	0 0	8 1/2	" (Soda Crystals)	"	2 1/2
mate	per lb.	0 0	8 1/2	" Acetate (ex-ship)	"	14 1/2
mate	per lb.	0 0	8 1/2	" Arseniate, 45 %	"	11 1/2
mate	per lb.	0 0	8 1/2	" Chlorate	per lb.	0
mate	per lb.	0 0	8 1/2	" Borate (Borax)	net, per ton	18 1/2
mate	per lb.	0 0	8 1/2	" Bichromate	per lb.	0
mate	per lb.	0 0	8 1/2	" Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton	10 tons	0 7
mate	per lb.	0 0	8 1/2	" (74 % Caustic Soda)	"	8 7
mate	per lb.	0 0	8 1/2	" (70 % Caustic Soda)	"	9 7
mate	per lb.	0 0	8 1/2	" (60 % Caustic Soda)	"	10 7
mate	per lb.	0 0	8 1/2	" (60 % Caustic Soda, cream) (f.o.b.)	"	6 7
mate	per lb.	0 0	8 1/2	" Bicarbonate	"	6 7
mate	per lb.	0 0	8 1/2	" Hyposulphite	"	5 7
mate	per lb.	0 0	8 1/2	" Manganate, 30%	"	18 1/2
mate	per lb.	0 0	8 1/2	" Nitrate (95 % ex-ship Liverpool)	per cwt.	0 8
mate	per lb.	0 0	8 1/2	" Nitrite, 98 %	per ton	29 1/2
mate	per lb.	0 0	8 1/2	" Phosphate	"	4 1/2
mate	per lb.	0 0	8 1/2	" Silicate (glass)	per ton	4 1/2
mate	per lb.	0 0	8 1/2	" (liquid, 100° Tw.)	"	3 1/2
mate	per lb.	0 0	8 1/2	" Stannate, 40 %	per cwt.	3 1/2
mate	per lb.	0 0	8 1/2	" Sulphate (Salt-cake)	per ton	0 17
mate	per lb.	0 0	8 1/2	" (Glauber's Salts)	"	1 1/2
mate	per lb.	0 0	8 1/2	" Sulphide	"	8 0
mate	per lb.	0 0	8 1/2	" Sulphite	"	5 5
mate	per lb.	0 0	8 1/2	Strontium Hydrate, 100%	"	5 7
mate	per lb.	0 0	8 1/2	Sulphocyanide Ammonium, 95 %	per lb.	0 0
mate	per lb.	0 0	8 1/2	" Barium, 95 %	"	0 0
mate	per lb.	0 0	8 1/2	" Potassium	"	0 0
mate	per lb.	0 0	8 1/2	Sulphur (Flowers)	per ton	5 1/2
mate	per lb.	0 0	8 1/2	" (Roll Brimstone)	"	5 1/2
mate	per lb.	0 0	8 1/2	" Brimstone: Best Quality	"	5 1/2
mate	per lb.	0 0	8 1/2	Superphosphate of Lime (26%)	"	2 1/2
mate	per lb.	0 0	8 1/2	Tallow	"	23 1/2
mate	per lb.	0 0	8 1/2	Tin Crystals	per lb.	0 0
mate	per lb.	0 0	8 1/2	" English Ingots	per ton	69 0
mate	per lb.	0 0	8 1/2	Zinc (Spelter)	"	15 0
mate	per lb.	0 0	8 1/2	" Chloride (solution, 100° Tw.)	"	5 7

THE CHEMICAL TRADE JOURNAL

AND
OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

420.

SATURDAY, JUNE 8, 1895.

Vol. XVI.

Contents.

	PAGE		PAGE
Topics	365	Liverpool Oil and Colour Market..	372
Petroleum from U.S.A.	366	The Metal Market	372
Ligence	366	Report on Manure Material.....	372
Atoms Decisions	367	Liverpool Mineral Market	373
Fibre in Paper Making	367	Hull Paint, Oil, and Colour Report	373
ary Jottings	368	Tyne Chemical Report.....	373
en Accumulator	368	West of Scotland Chemicals	373
Companies	368	New Companies.....	373
tion of Explosives	370	The Patent List.....	374
Alkali and Bleach.....	371	Gazette Notices.....	374
.....	371	Imports	374
monia Products	372	Exports	377
us Chemical Market	372	Prices Current.....	380
r Market	372		

ADVERTISEMENT.

TENDER.

BOROUGH OF BURTON-UPON-TRENT.

T A R .

Mayor, Aldermen, and Burgesses of the Borough of Burton-upon-Trent, acting by the Council, invite TENDERS for the surplus TAR to be produced at their Works during Twelve Months of July next.

quantity of Coal carbonised during the Twelve months. 25,000 tons. will be delivered free into contractor's tank-trucks, on the Gas Works (ing).

Net cash monthly.

sealed and endorsed "Tender for Tar," are to be delivered to me, at or m., on Friday, the 29th of June inst.

at or any tender will not necessarily be accepted.

F. L. RAMSDEN, Manager and Engineer.
Electric Light Works, Burton-upon-Trent, June 8, 1895.

Notices.

communications for the *Chemical Trade Journal* should be by Post, and Cheques and Post Office Orders made payable to—
118 BROS., 32, Blackfriars Street, MANCHESTER.

Our Registered Telegraphic Address is—

"Expert, Manchester."

Terms of Subscription, commencing at any date, to the *Trade Journal*,—payable in advance,—including postage of the world, are as follows:—

arly (52 numbers)	12s. 6d.
f-Yearly (26 numbers)	6s. 6d.
arterly (13 numbers)	3s. 6d.

Advertisements.

Advertisements of Situations Vacant, Premises on Sale or To be Let, ous Wants, and Specific Articles for Sale by Private Contract are in the *Chemical Trade Journal* at the following rates:—

10 Word and under..... 2s. 6d. per insertion

Each additional 10 words

Advertisements, Announcements in the Directory Columns, and all Advertisements intended for insertion in the current week's issue must be sent to the office by Thursday morning at the latest.

CURRENT TOPICS.

FERTILISERS OR MANURES.

THE advances that have been made in agricultural science during the past decade have been many and significant, but after all it would appear that we have only reached in many things that dangerous state of a "little knowledge."

Up to the present there has not been the same sharpness of definition between the use of the words fertilisers and manures that attaches to these two words in the United States for instance. The results of some very important recent researches point however to the necessity of making a distinction in the immediate future.

Much has been said in these columns and elsewhere, upon the subject of the provision of adequate means for the preservation of ordinary farmyard manure. The importance of properly preserving the valuable constituents of this kind of manure has in no way been diminished by the researches to which we have just referred, but rather increased, since they go to prove that the manure should be collected in such a manner as to preserve the rich urine and lessen the amount of comparatively worthless solid excreta, but more particularly do these recent investigations throw important light upon the way in which manure must be employed.

The principle of making the most of the yard manure, and supplementing its shortcomings with fertilisers, is one that has been frequently recommended to agriculturalists, but after Dr. Wagner's latest work, this principle must be subjected to considerable modification. It is not so many years since the action of nitrifying bacilli was first indisputably demonstrated, and great was the light which the discovery threw upon scientific cultivation. In advocating the heterogeneous use of manures and fertilisers it now appears that we have been trying our best to stultify the good that was to be expected from the discovery of nitrifying organisms. By the aid of an extensive series of exhaustive experiments, Dr. Wagner has found that there exists in all fresh stable and like manure (and apparently more especially in the solid portions) an anti-nitric bacterium, which not only undoes and checks the work of the nitrifying organisms, but continues its own destructive process until the nitrogen is actually liberated and so lost for good. This latter action has been proven by a special set of experiments which show very clearly that the action is not one of mere retardation. These statements are of such a revolutionary character that independent confirmation by other scientists will be welcome. Dr. Wagner is no tyro, however, and his discovery promises to effect a complete change in manuring methods. The efficacy of various nitrogenous fertilisers has been the subject of many discussions, but it is quite possible that the clue to the discrepancies that have been recorded from time to time may at last have been found. It is very evident that the use of nitrogenous fertilizers in the future will have to be practised independently. Admixture with manure is only a

waste of material and money. It also behoves us to make a more discriminate use of the word manure, in the future, in reference to schemes for restoring to the land the constituents removed by crops, and which are essential to successful cultivation.

WEIGHTS AND MEASURES.

In connection with the good work that the London Chamber of Commerce is doing on behalf of the chemical and allied industries, regarding the use of metric and other weights and measures, a case of some considerable interest has recently been settled in the Chancery Division. The owner of a lead works was summoned under the Weights and Measures Act for using an unstamped beam scale, which it was contended was not used for trade purposes other than private. Under the circumstances the justices of Somerset stated a special case. It appears that the scales were used for checking the weight of the produce of the works. This checking included, among other things, the weighing of the lead after it had been made into pigs. So far so good. But after so checking the weight of the lead on the said scales it was consigned to purchasers, who made returns of the weight of lead received and whose weights were accepted. An invoice was always sent out with the lead, the weight being specified thereon, such weight having often been ascertained by the use of the scales in question, though this was not always the case, the same end being attained by counting the number of pigs.

The justices of Somerset were equally divided on the question of whether under these conditions the scales could, under the meaning of the Act, be held to have been a weighing instrument used for trade.

Mr. Justice Charles and Mr. Justice Wright, however, gave judgment to the effect that the special section of the Act defining "trade" provided in effect that everything was trade which concerned a contract for the sale of goods by weight or measure. This instrument was therefore used for trade purposes. Mr. Justice Wright further pointed out that it would have been a different thing if the owner had kept the result of the weighings to herself, but she was in the habit of sending them out to purchasers. This case emphasises the great care which it is at present necessary to exercise in the use of unstamped or unauthorised scales in manufacturing processes lest they become unwittingly employed in an illegal manner.

EXPORTS OF PETROLEUM FROM U.S.A.

THE Chief of the Bureau of Statistics, Washington, gives the following returns of the exports of petroleum and petroleum products for April. The total shipments were 76,985,148 gallons, compared with 62,443,639 gallons in April, 1894. The total for the ten months ending April, 1895, was 748,175,281 gallons, against 745,625,854 gallons during the same period in 1894. The details of the shipments are as follow:—

CRUDE PETROLEUM.		Gallons.
Total, April, 1895	10,441,335	
" " 1894	7,185,677	
NAPHTHAS.		
Total, April, 1895	1,297,855	
" " 1894	813,020	
ILLUMINATING.		
Total, April, 1895	60,930,505	
" " 1894	51,028,240	
LUBRICATING AND PARAFFIN.		
Total, April, 1895	4,314,067	
" " 1894	3,414,854	
RESIDUUM.		
Total, April, 1895	1,386	
" " 1894	1,848	

Legal Intelligence.

HIGH COURT OF JUSTICE.

QUEEN'S BENCH DIVISION.

(Before Mr. Justice Hawkins, without a jury.)

PEACE AND OTHERS (CLAIMANTS) v. BROOKES (EXECUTION CREDITOR).

This was an interpleader issue. At the close of the year 1894 Joseph MacDougal Smith, a varnish manufacturer, near Manchester, agreed with the claimants, merchants in Liverpool, to whom he was indebted with sundry other creditors, to pay them a composition of their debts respectively, and in order to enable him to pay creditors, other than the claimants the amount of their composition requested the claimants to make him a loan of £150., which they consented to do. To secure the repayment of such loan, and also to secure the composition to which the claimants were entitled, MacDougal Smith on December 4 last executed a bill of sale to the claimants of the chattels named in the schedule thereto, and such bill of sale was duly registered on December 11. One Brookes, a creditor of MacDougal Smith, who had not agreed to accept the composition, on April 1895 obtained judgment and issued a *fi. fa.* for the amount of his debt and costs, and execution was levied by the Sheriff of Lancashire upon the goods in question. The claimants disputed the right of the sheriff so to levy, and the sheriff thereupon interpleaded. The claimants alleged that the bill of sale was void—first, because it was not properly attested under section 10 of the Bills of Sale Act, 1878; secondly, because the consideration for it was not truly set out as required by section 8; thirdly, because it was not in accordance with the form in the schedule to the Act as prescribed by section 9. The first and second objections, the facts were that the bill of sale was attested by Robert Leck, a chartered accountant at Liverpool, described himself as the manager for Peace & Co., oil merchants of the same place, one of the claimants. The negotiation for the bill of sale was conducted by him, and he had to see to the payment of the composition to the creditors other than the claimants; and for the purpose of enabling him so to do an account was opened with the Bank of Liverpool (Limited) in the joint names of MacDougal Smith and his wife, £150. was advanced in three cheques—of Peace & Co. for £100, Chisman & Co. for £25., and of Turnbull & Co. for £25. Each cheque was drawn payable to the order of MacDougal Smith and his wife. These cheques were paid into the bank by Leck half an hour or so before the execution of the bill of sale duly endorsed. Leck was then acting as agent for Peace & Co. in regard to the bill of sale, and that he was sole attesting witness as a chartered accountant. There was no suggestion of any want of *bona fides*.

Mr. Thomas appeared for the claimants; Mr. Woodburne for the execution creditor.

His Lordship, in giving judgment after stating the facts as set out, proceeded.—As to the first objection, by section 10 of the Bills of Sale Act, 1878, it was required that "execution of every bill of sale" should "be attested by a solicitor of the Supreme Court," and that the attestation should state that it was before execution explained by such solicitor to the grantor. Section 10 of the Act of 1882 this provision was repealed, and in its stead it was provided that "the execution of every bill of sale shall be attested by one or more credible witnesses not being a party or parties thereto." There is no provision for saying that Mr. Leck was a party to the bill of sale according to the ordinary understanding of that expression, and I see no reason for interpreting it in any other sense. The object of the Legislature in dispensing with the formality required by the statute of 1878 was simply the process to be observed on the execution of the bill of sale, and to make the attestation by any credible witness not being a party sufficient. The agent of a party to an instrument is not of necessity a party to it himself. If the Legislature had it in contemplation that the agent should be treated as that which he is not, I think it would have used words to express such intention. There is no authority to support the objection, and such as can be said to throw any light upon it against it—in "Penwarden v. Roberts" (9 Q.B.D., 137). Mr. Justice Field and Mr. Justice Bowen upheld a bill of sale attested by the agent of the grantee, and Lord Justice Cotton, in "Hill v. Kirkwood," in the last-mentioned case, expressed the same view. In "See Claridge" (7 Q.B.D., 516), the attesting solicitor was himself the grantee, an actual party to the deed, and on that ground the bill of sale was declared to be invalid. The first objection, therefore, must be overruled. As to the second objection, I think there is no foundation for it. The consideration said not to be truly stated was that part of it which related to the £150. advanced. As a matter of fact it was advanced to MacDougal Smith, not to Smith and Leck. It was money lent by the claimants to him, and he alone could have been

it as money lent and advanced to him. It is true that the money was made by three cheques payable to the joint order of Leck, and those cheques were paid into the joint account, but it was only for the purpose of having it distributed among persons whose compositions were to be satisfied out of it. The advance was nothing more or less than an advance to the purpose correctly stated in the bill of sale. Leck, by the bill of sale, acted as agent for each, and the collateral arrangement was having a joint account in his name and that of the grantor for the purpose of facilitating the disposal of the money when advanced, and not altering the character of the consideration, which consisted simply of composition on the old debts already due and the new advance. The third objection, by section 9 of the Bills of Sale Act, 1882, it is said that "a bill of sale made or given by way of security for the loan of money by the grantor thereof shall be void unless made in accordance with the form in the schedule to this Act annexed." It is said that the bill of sale in this case is not in accordance with the form annexed, by reason of the introduction into it of a stipulation and condition that during the course of the trading of the said Joseph Smith (the grantor) he shall not during the existence of this bill of sale obtain credit to the extent of £10, without the consent of one of the parties hereto (but this clause shall not apply to his dealing with the said J. MacDougall Smith for the purchase of goods from the said firm's parties and the said J. MacDougall Smith binds himself to give the said J. MacDougall Smith the greater portion of his business), and the said J. MacDougall Smith shall keep proper books of account of his said business and shall allow the said parties hereto or any of them to enter the premises of J. MacDougall Smith and inspect the same books at all reasonable times during the existence of this security." I am at a loss to see how the agreement can be said to be terms agreed to for the maintenance of the security. The earlier portion of it appears to be directed to the obtaining by the grantees of the bill of sale of a copy of that part of the grantor's custom to which it is directed, in order to enable them to have the means of ascertaining whether or not the bill of sale is performed. I am therefore of opinion that the bill of sale is in accordance with the form, and is for that reason valid. I do not feel it necessary to discuss the cases cited at the trial. It is in search among the numerous cases decided upon section 9 for one similar to the present. The principles by which I have been guided are fully expressed in "Thomas v. Kelly" (13 App. Cas., 506), "Le v. Stringer" (13 Q.B.D., 392), and "Lyon v. Morris" (19 Q.B.D., 139). There must, therefore, be judgment for the execution of the bill of sale and against the claimants, with costs.

RECENT CUSTOMS' DECISIONS.

BENZOL.

There was an appeal by H. R. Shultz against the action of the Collector of Customs at Philadelphia, U.S.A., as to the rate and amount of duties properly collectable on certain benzol imported on December 12, 1895. In giving his opinion, General Appraiser Lunt

stated that the merchandise covered by this protest consists of benzol imported into the port of Philadelphia by Mr. H. R. Shultz, upon which a duty was assessed at 25 per cent. ad valorem, under paragraph 60, Act of March 3, 1879.

The importer claims the same to be a preparation or product of coal tar, not a colour or dye, exempt from duty under the provisions of paragraph 443.

It is stated that this benzol is a refined fractional distillate of coal tar, not a colour or dye, and not commercially known as an oil, but a product of coal tar and a chemical compound. In the opinion of the Collector, the term 'preparations' of coal tar is more general and extensive than 'products,' the former including compounds of coal tar, the distinctive and dominating element is derived from coal tar, the latter is limited to substances derived wholly from coal tar by distillation or other methods of elimination. Having found the merchandise to be a product of coal tar, we are required to construe the provisions of paragraph 443, which reads as follows:— "Coal tar, crude, and all preparations except medicinal coal tar preparations and products of coal tar, not colours or dyes, not specially provided for in this Act."

It is our duty to give force and effect to all provisions of the Act if it can be done by a reasonable construction. In the course of the argument of the present tariff by Congress, the provision in the Act relating to coal tar, crude, and preparations and products of coal tar, not colours or dyes, as first reported to the House, did not contain the words 'except medicinal coal tar preparations.' These words were afterwards inserted, and the preparations so excepted were included in paragraph 58 in the dutiable list. We can make all of paragraph 443 effective if we read it as if the words 'except medicinal preparations' were in brackets. To construe the exception as including

'except medicinal coal tar preparations and products' would require the qualifying word medicinal to be applied to products, and logically to be included with preparations in paragraph 58. A further reason why we think this is not to be taken as a proper construction of the paragraph is the fact that the so-called coal tar products are not medicinal, but the medicinal substances of which some elements are obtained from coal tar are complex chemical preparations, as are also the so-called coal tar colours and dyes.

"If we extend this exception beyond the words 'medicinal coal tar preparations,' we must at least embrace all up to the next comma, and by so doing the denominative provision for coal tar preparations and products is eliminated from the paragraph.

"We therefore hold that coal tar preparations and products, not medicinal, not colours or dyes, and not elsewhere specifically provided for, are embraced within the provisions of paragraph 443.

"The protest is sustained."

ADANSONIA FIBRE IN PAPER MAKING.

Adansonia bark is chiefly used for the preparation of strong wrapping papers, cartridges, and emery paper. In point of strength the fibres obtained from it are only surpassed by those from the mulberry bush. Papers made with an addition of adansonia fibre not only possess greater tensile strength, but offer greater resistance to tearing. This is characteristic of such papers in a marked degree, and is due to the long, strong fibres intermingling with the others in the sheet of paper. The fibres under the microscope exhibit so distinctive an appearance that they cannot be easily confounded with other fibres.

To obtain the fibre from the raw bark on the manufacturing scale, the adansonia is first of all cut into small pieces about an inch or an inch-and-a-half long with an ordinary rag chopper, or by hand with strong knives. If it is desired to bleach the fibre after chemically treating the cut bark, it is necessary to subject the raw stuff to a system of purification to remove knots, &c. For unbleached papers this purification is not necessary beyond the usual dusting. When the material has been cut and dusted, it is placed in a revolving boiler, and there boiled for ten hours or so, according to what is considered necessary, in a caustic soda lye containing 3½ per cent. of soda in the state of caustic, and under a maximum pressure of 55 lbs. above atmosphere. It is usual, in actual practice, to soak the bark in the lye within the boiler, and to see that it is covered with liquor before raising the pressure. The object of this is to prevent the fibre becoming discoloured, direct steam having the tendency to darken it.

If the fibre is properly boiled, the particles of fibre should easily pass between the fingers when lightly pressed, and feel strong and tough. The pulp should not be allowed to lie long, owing to a species of fermentation setting in which destroys the strength of the fibre. It is usually worked up immediately after being boiled.

The pulp from the boilers is then washed in the breaking and washing engine, a process which takes a long time owing to the slimy nature of the incrusting matter surrounding the fibre stopping up the wire cloth covering the washing drum. This latter is brushed at intervals to keep it open. Pure, clean water must also be used, and the breaking-in roll should be adjusted to thoroughly open out or brush the fibre only, thus preserving its full length.

The preparation and bleaching of the fibre is very similar to jute and manilla and such like raw stuffs. The difficulty of bleaching to a good white colour with a reasonable amount of bleaching power is also apparent in practice, and depends largely on the nature of, and the care with which the chemical treatment has been carried out in the boiling. The loss in weight which the raw adansonia undergoes varies from 50 to 60 per cent., that is to say, 100 parts of adansonia bark will yield from 40 to 50 parts of paper. Papers made from adansonia fibre alone are not frequently to be met with, the bulk of the fibre being used in conjunction with others in making compound papers. These compound papers possess a strength in proportion to the quantity of adansonia fibre used in their manufacture.

PETROLEUM IGNITED BY LIGHTNING.—During a thunderstorm at Hamburg last week a flash of lightning struck a petroleum tank belonging to the Bremen Trade Company, Limited, an English company. The petroleum caught fire, and the flames quickly spread to the adjoining tanks, until five were ablaze at the same time. So firm a hold did the flames obtain that it was useless to think of extinguishing them, and the police contented themselves with preserving the adjacent buildings and securing the safety of the public. The fire raged for more than 24 hours. Four of the filled tanks of petroleum have been totally destroyed, as well as 3,000 full and about 7,000 empty barrels. The depot of the Standard Oil Co. was not endangered as the wind was blowing in the opposite direction.

Parliamentary Jottings.

GOLD MINING IN NORTH WALES.

In the House of Commons last week Major Jones said:—I beg to ask the Chancellor of the Exchequer (1) how many tons have during the nine months last past been treated at the Morgan gold mine, North Wales, what is the average yield of gold per ton of ore treated, and what is the gross value of such gold; (2) how many tons of ore were treated at such mine last month, and what was the average yield per ton; (3) how many leases or take-notes are at present held by lessees of the Crown for gold-mining purposes in North Wales, and what aggregate acreage do such leases and notes embrace; (4) what amount has been paid to or is due to the Crown by way of royalties during the last nine months, and what amount by way of tied rents and fees for leases or take-notes during the same period; (5) and is the Government taking any, and, if so, what steps to encourage the opening up and development of these mines?

Sir W. Harcourt: It is presumed that the mine referred to is the Gwynfydd Mine, the property of the British Gold Fields Company. In the period mentioned 10,747 tons of ore have been treated, yielding an average of 12½ dwt. per ton. The gross value, assuming the price to be £3. 10s. per ounce, would be £23,105. The answer to the second paragraph is 1,385 tons, yielding an average of 10z. 6dwt. 19 grains per ton. As to the third paragraph, there are at present 27 leases for varying terms, embracing an aggregate acreage of upwards of 10,000 acres, and 50 take-notes for the year, embracing an acreage of similar amount. The answer to the fourth paragraph is that receipts from fees for leases or take-notes had been for the nine months £129. and from rent and royalties for the year to the 31st of March, 1895, £642. In regard to the last point, I may tell my hon. and gallant friend that I have personally within the last few days been taking a great deal of pains to investigate this question, with the desire to do all that a Government can do properly to encourage the gold-mining industry of Wales, which seems already to have taken a start it has not had before.—(Cheers.)

Major Jones: May I ask the right hon. gentleman whether the concession made to the Morgan mine will be extended to the gold workings in Carmarthenshire and other parts of Wales?

Sir W. Harcourt: I could not offhand give any such promise, because I don't know exactly the particulars.

THE SEWAGE FARM AT ALDERSHOT.

In answer to Mr. A. C. Morton,

Mr. Campbell-Bannerman said,—It is not known that any case of death can be attributed to the sewage farm at Aldershot; but it is admitted that the farm is not in a satisfactory state. Negotiations with the local authorities are proceeding with a view to a new sewage farm being established at a greater distance from the camp; and meanwhile steps are being taken for the improvement of the present farm.

Mr. A. C. Morton asked whether it was the fact that in the case of some officers who were taken ill, their friends had to defray the expenses of employing private doctors, and that the War Department had refused to refund the money.

Mr. Campbell-Bannerman—That seems to be a separate question altogether from the question on the paper, which has reference to the sewage farm. (Laughter.)

THE OXYHYDROGEN ACCUMULATOR.

By H. N. WARREN.

GROVE'S oxyhydrogen battery, better known as the gas battery, in its simplest form consists of two strips of platinum foil, each strip being exposed, one to the action of hydrogen gas, the other to that of oxygen, contained in suitable receptacles. Based upon a somewhat similar theory, while at the same time taking advantage of the peculiar surface action that the element palladium exerts when exposed to an atmosphere of hydrogen, the author has constructed batteries according to the following method: He takes an ordinary Woulff's bottle containing acidulated water, into which are inserted two tubes, constructed by fusing into the glass tubes two platinum wires, terminating in a platinum plate for the oxygen tube, and one of palladium for the hydrogen tube, each tube being filled with its respective gas.

Several cells thus arranged in series have been found to produce a mean voltage of .45, while by rendering the surface more active, even .5 has been attained; a series of five such batteries being capable of decomposing water. The next experiments performed were with a view of increasing the pressure of each gas, and here the first danger presents itself. Subjected to 180 atmospheres pressure the mixed gases had been found on previous occasions to unite with great violence, whereas by increased surface action they combine at even diminished

pressure. At the same time, the consumption of hydrogen being less than that of the oxygen in its union to form water, a further difficulty came up in the matter of regulating the pressure. In order to produce greater surface action, plates of graphite were prepared, some platinum and others paladinised, each being exposed to the action of its respective gas by enclosing the same in steel canisters lined with lead, and furnished with a water gauge in order to indicate the level, and ensure the existence of an even pressure. Both gases were now introduced under two atmospheres pressure, and were somewhat quickly absorbed, an increase of every two atmospheres increasing the voltage by about .15 volts, until one volt was reached, and in one case even 1.25 was attained.

Experiments are now being carried out with respect to maintaining a more steady pressure, and to rendering the apparatus less dangerous as regards an explosive mixture being formed; when this is accomplished, together with the removal of other small difficulties which still exist, it will probably be possible to construct a self-charging accumulator.

Reports of Companies.

MESSRS. J. C. AND G. FIELD, LIMITED.

The ordinary general meeting of the shareholders of J. C. and G. Field, Limited, was held last week at Winchester House, Old Broad Street, E.C., under the presidency of Mr. Percy Bicknell (the chairman of the Company).

The Chairman said.—Gentlemen, we are pleased to meet you to-day, because if you compare, as I hope you have done, our balance sheet with that of last year, or those of the two last years, you will find that any hopes which your directors held out to you last year of improvement in the trade have been realised. Fortunately, our business is one of those which suffers from a prolonged frost or an epidemic of influenza. It cannot be said that trade is yet booming; but at the same time, we have shared in the general revival which has taken place during the last few months, and our position at present is distinctly good. During the past year, toilet soaps of all sorts of qualities, at all sorts of prices, have been placed on the market, I may say, from most all quarters, and yet we have been able to hold our own, and that is a sign of our business is at present decidedly prosperous. In candles we have suffered from continued competition, and competition mainly from the quarters. The very low prices of raw materials which have prevailed till the last two or three years have afforded special facilities to the large army of "hand to mouth" candle makers. But we suffer, gentlemen, from a much more serious competition, and this is from the west.—I am afraid I must say the senseless way—in which some of the larger houses compete for business at "skinning" prices, or prices which, in our opinion, can hardly yield a profit at all. We hope in time they will discover that this is not profitable to them. In the meantime, it is certainly very injurious for the rest of the trade. The report informs you that, during the past year, we have lost the services of Sir Frederick Abel and Mr. Leopold Field, and although we on this side of the table naturally regret the severance of ties which have existed, in one case for several and in the other for many years, yet can assure you that, in our opinion, the business has not suffered from the change. Our excellent factory manager, our chemist, and the whole of the staff, have during the past year worked to our entire satisfaction. (Applause.) They have got thoroughly accustomed to and mastered our new premises and new appliances, and we feel that the time has arrived when we can very well dispense with the services of the salary of a second managing director. In the place of Sir Frederick Abel, we have elected to the Board my friend Mr. Walter J. Strid, who is a gentleman of great business experience, of varied knowledge and sound judgment, and who has already proved himself most valuable to our now thoroughly harmonious Board. There is an old saying that it is unsafe to prophesy until you know, and that has been illustrated in the case of a worthy shareholder who, at our meeting last year, told us that unless there were some other department taken up the profits of the company would not increase. I am not sure I exactly understood the meaning of his words, unless he meant that we must take up an entirely new article. Well, we have not taken up any new article of importance during the year, and, with careful, economical management, we have got a very small amount of bad debts, and our profits are double—(applause)—and had it not been for the arrears of interest on the preference shares, which we are about to pay off in full, and which we are compelled by our articles to pay off in full before declaring a dividend, we should have been able to declare a dividend of 7 per cent. or 7½ per cent. on the ordinary shares. (Applause.) Now, gentlemen, a few words about the future. The savings which we have been able to effect in the general manufacturing expenses we look upon as of a permanent nature. Those we have effected by reduction in the managing director

and the directors' fees we hope will be of a less permanent character, because, although we propose for this current year to continue at half or reduced fees, we think that should the next year's profits ascertained proved sufficient to enable us to pay a good dividend on ordinary shares, no one of our shareholders will object to our giving the remuneration for the then current year at the old rates, (hear.) I have already alluded to some general improvements to be made; but I can go further, and tell you that the last quarter of our financial year was distinctly the best of the four. We had a good trade in nitrate, and at the present time have orders and contracts in hand which will ensure our being busy for some time to come. The Candlemas Association, as most of you, no doubt, know, has recently revived, and we have every reason to believe that it will be successful in securing at least a moderate profit on the low-priced goods, which there is an ever-increasing demand. The value of our shares during the last few months has been greatly depressed by the sales of blocks. These sales have now ceased, and we were happy to find that the shares which have changed hands have been largely taken up by our own customers, and while those new shareholders are congratulated on having acquired their holdings at such moderate prices, it is distinctly of great advantage to the Company that we should have a largely-increasing number of gentlemen personally interested in the Company, and who are in a position to increase the sales of our goods. I do not wish to pose as a rival of last year's prophet; but I must say whether it is your pleasure or not presently to re-elect me upon the Board, I shall be disappointed if we do not find next year that we are sufficient to pay a good dividend on the ordinary shares. (Hear.) We shall, as usual, be happy to hear any remarks from shareholders, and will answer, either here or at the office, any inquiries they may wish to make. I now beg to move the adoption of the report and accounts.

Walter J. Stride seconded the motion, which was carried unanimously.

The retiring director (Mr. Bicknell) was re-elected, as was also the other director (Mr. Thomas Rawlins), and the proceedings then closed with expressions of thanks to the chairman and directors and staff for the way in which the affairs of the Company had been conducted during the past year.

NOBEL-DYNAMITE TRUST, LIMITED.

An ordinary general meeting of the shareholders of the Nobel-Dynamite Trust Company, Limited, was held last week at the offices of the company, 220, Winchester House, Old Broad-street, E.C., Mr. J. P. Reid, J.P., of Kilmardinny (the chairman), presiding.

Secretary (Mr. H. de Mosenthal, F.I.C., F.C.S.) having read the report and accounts, the meeting was convened.

Chairman said: Gentlemen, I think you will agree with me that the report in your hands shows that the past year compares favourably with the previous year's. I consider this is all the more gratifying, in proof of the soundness and strength of our concern, as the result is attained notwithstanding some exceptional and unforeseen calamities which are not likely to recur. I am sorry to say that I have to report several explosions with serious loss of life, and in one case with damage to the works. As I have pointed out on a previous occasion, calamities of this kind have, in spite of every precaution, to be regarded as one of the risks of your trade, and, as I explained at the last meeting, the distribution of risks through the formation of your company for co-operation of the factories linked with each other enable us to share the loss, and to bear it much more easily than would be the case with any manufacturing company which stood alone. At the close of our financial year, moreover, a deplorable accident occurred in loading explosives into barges on the Rhine, attended with loss of life; the value of the goods destroyed is covered by insurance. This explosion is the first which has occurred in the transport of your explosives, and the cause of this disaster is being carefully investigated. I feel confident that the outcome of this investigation will not weaken the faith in the perfect safety of your explosives, and that we need have no apprehension of the recurrence of a similar disaster. Besides this I have to mention a severe loss of a different character—of a nature, in fact, not only to surprise but to reflect upon the management of your business, but incomprehensible to all those who have had to investigate the matter. I refer to the embezzlement of a large sum of money by Zander, one of the trusted servants of one of your subsidiary companies. Zander, who is now in prison awaiting his trial, is a man 68 years of age; he has been in the employ of the Dynamit-Actien-Gesellschaft of Hamburg for twenty years, being its chief bookkeeper, and holding the position of the company jointly with another official of the company. In his own confession he forged the signature of his co-trustee, and thus succeeded in misappropriating the funds of the company, using them to cover large deficiencies in his own speculations. The embezzlements extend over a number of years, and amount in all to 837 marks, or about £46,000, a portion of which he passed by

false entries to the debit of profit and loss account in previous years, leaving a balance of 586,400 marks, or nearly £29,000, to be written off now. All Zander's doings are being thoroughly investigated by the examining judge in Hamburg. Although some portion has already been recovered, the total loss has been written off the large reserves of the Dynamit-Actien-Gesellschaft, and I am pleased to say that the profits made in 1894 enabled some other of your subsidiary companies to increase their reserves by a like amount; so that in the aggregate the reserves of your subsidiary companies have not been diminished.

You will no doubt have followed with interest the accounts which appeared in the newspapers of the action brought by Nobel's Explosives Company of Glasgow against the British Government for the infringement of Mr. Nobel's ballistite patent, a suit which is commonly known as the "Cordite Case." Mr. Justice Romer decided that whilst Mr. Nobel's patent is perfectly valid, the smokeless powder made by the British Government was not an infringement of his patent. The importance of the issue justified us, on the strength of the very best advice, to carry the matter up to the highest court; but I regret to say that the Court of Appeal and the House of Lords have confirmed Mr. Justice Romer's decision. The profit made by Nobel's Explosives Company, Limited, Glasgow, in 1894 enabled it to write off out of revenue the cost of the cordite suit, as far as ascertained on December 31st last. I am pleased to be able now to refer to more satisfactory subjects. The business of the past year has, as a whole, been very satisfactory. The sales of your subsidiary companies show a steady increase, and, with a general revival of trade, and more particularly the present and prospective development of mining enterprise, the prospects of continued prosperity in that direction are most encouraging. New markets are opening up, and the current year bids fair to outdo any previous year in activity. After several years of struggle with the holders of the dynamite concession in the South African Republic, we have been able to arrive at a compromise, and you have now, through your subsidiary companies, as well as through the other companies linked with them, an important interest and a controlling influence in the new company formed to work the concession. The consumption in the Transvaal is increasing by rapid strides, and the company is erecting extensive works, which will be able to effectually supply that very important market. I have still to mention that two competitive factories have recently started work in Germany; but we are fully prepared to meet this competition, and are confident that we will continue to maintain the high position we occupy in the trade. Before closing I wish to draw your attention to the passage in the report relating to the secretaryship of the company. Mr. F. C. Bourne has for eight years held that post, and shown such ability that your directors had great pleasure in warmly recommending him to the board of the New South African Company as an eminently suitable manager. Your board has appointed as his successor Mr. John Leechman Taylor, who has for the last twelve years held the post of secretary to Nobel's Explosives Company, Limited, Glasgow. With these few remarks I beg to move: "That the report of the directors and accounts for the year ended April 30, 1895, be adopted, and that a dividend be now declared on the paid-up capital of the company of 10 per cent. on Friday, May 31, and that £14,209. 0s. 6d. be carried forward to the next account."

Sir Charles Tennant, Bart., seconded the motion, which was carried unanimously.

On the motion of Mr. G. Aufschlaeger, seconded by Mr. J. Walker, the retiring directors (Mr. Thomas Reid, the Right Hon. Lord Ribblesdale, and Mr. J. D. Taylor) were re-elected directors of the company.

SAN PATRICIO NITRATE CO., LTD.

An extraordinary general meeting of the San Patricio United Nitrate Company, Limited, was held recently at Winchester House, Old Broad-street, E.C., Mr. Henry W. Lowe (the chairman) presiding.

The Chairman said: Gentlemen, the last time I had the pleasure of meeting you I stated to you the difficulties which this company was labouring under in the refusal of one of the vendors to acknowledge the power of attorney, or, rather, to acknowledge the agreement which had been entered into by his attorney for the sale of the property to this company. Unfortunately, those refusals have been continued up to the last moment. He could make no impression upon the vendor, who absolutely refused to be bound by it; so that we simply had two alternatives placed before us—either to go to law to enforce our rights or to wind up. In the first place, if we had gone to law we should have entailed upon the company heavy expenses, even if we succeeded, and, besides that, there would have been very great uncertainty as to the result, especially when we have to consider that in all probability we might have to go to Chili to sue one vendor who is resident there. With regard to the winding up, we also saw that that would entail a large drain upon the assets of the company on account of the expenses which necessarily attend the winding up, in addition to those expenses which the company has been put to up to the present in the ordinary way.

Under those circumstances, we had to consider whether we could not come to some terms with the vendors, and negotiations were then opened with the representatives of the vendors with the view of arriving, if possible, at some compromise. I think it is not only right, but it is a duty I owe to those gentlemen, and it is a pleasure to myself also to take this opportunity of stating that I owe them my best thanks for the extremely courteous manner in which those negotiations have been carried through. The great courtesy I met with has eased the negotiations very much indeed, and although at times the discussion was somewhat warm, yet, fortunately, no temper was shown, and we had no ground to retrace to recover the position we held before. The happy result of these negotiations has been the agreement which has been placed on the table, and has been open to the inspection of the shareholders during the last few days. That agreement provides that the vendors will lay down a sum of money to cover the whole expenses of winding up and the whole expenses of the company up to the present time, and which will ensure the return intact of the shareholders' money; and besides that we have obtained from the vendors a bonus of 6d. a share to each shareholder as a solatium for the disappointment they have been under, and also some interest upon the principal which has been lying idle. I think, after reviewing the whole circumstances of our affairs, that this agreement will be considered satisfactory. There is no doubt that we had an exceedingly good property, but the directors think, in view of the altered state of the nitrate market, the acquisition of the property was not so desirable at the present price of nitrate as it was, or as it appeared to be, at the time we made the contract for the purchase of the property. No doubt, nitrate affairs will recover; but we have to look at the present, and we thought we were justified in doing all we could to arrive at some agreement by which the shareholders might be relieved of this difficulty and get their money back, plus some little benefit which attaches to it. I do not know whether any of you gentlemen have read the agreement through. It has been open to the inspection of the shareholders, and I think that you will find that every point has been provided for, and we hope if the resolutions are carried unanimously, as I trust they will be, it will result in the speedy distribution of the assets which the liquidator will hold, and then we shall come to the end of this very unpleasant affair. The first resolution I have to propose is as follows: "That the San Patricio United Nitrate Company, Limited, be wound up voluntarily under the provisions of the Companies Acts."

Mr. T. F. Read seconded the resolution, which was carried unanimously.

THE LONDON AND MANCHESTER PLATE-GLASS COMPANY, LIMITED.

A meeting of the shareholders of this company, which is now in liquidation, was held last week in the Accountants' Hall, King-street. Mr. Hudson A. Binney presided. Mr. Binney was the late manager of the company, and acts with Mr. Ernest Crewdson as joint liquidator and as joint receiver for the debenture holders.—The Chairman said that on August 30th, 1894, the date at which the company went into liquidation, the floating assets for distribution were as follows:—Book debts, £15,554; stocks of glass and material, £83,591; cash on hand, £630; uncalled and unpaid preference stock, £90,020; making a total of £189,795. Against this the liquidators had received in cash, book debts, £14,567; stocks of glass and material, £52,145; preference call and interest, £88,725; cash, £630; a total of £156,067. To this there were to be added debts owing to the liquidators for goods supplied, £3,334; materials still on hand estimated to yield £12,428, and unpaid call estimated to yield £900. There was therefore a sum of £172,729 to be set against the £189,795. This left a difference between stated assets and realised, and to be realised, assets of £17,066, which was equal to a reduction of 9 per cent. The liquidators, who were also receivers for the debenture holders, had dealt with the cash on hand at August 30th, 1894, and the cash receipts since—in all £156,067.—as follows:—Paid to ordinary creditors, £15,312, and to the British Plate-glass Company to cancel lease of Ravenshead works, £16,273; a total of £31,585. The receivers had paid to debenture holders, £84,100, and sundry expenses in carrying on the business, £14,137. The total payments of liquidators and receivers had therefore been £129,822, and there was a balance in their hands of £26,245. Adding the cash balance of £26,245, and the estimated value of the unrealised assets £16,662, and deducting for interest to date on debentures £6,000, and for further possible claims and expenses of liquidation £12,000, there was left a sum of £24,907 to meet a second and final payment to debenture holders of £84,059. This would make it necessary to take from the freeholds (which stood in the Company's books at £422,704) a sum of £59,152. This would pay off the debenture holders and all other creditors.—Mr. Ernest Crewdson said the time had come for the shareholders to intervene if they wished to save the valuable property which was still left to the Company, and which stood in the books as worth £422,000. The

land alone had recently been valued at £100,000. It would be a thousand pities if the property of the Company were sacrificed for a sum which would be just enough to pay off the remaining claims of the debenture holders. He did not think the business had been materially injured by the liquidation, and he suggested, speaking now as a shareholder, that they should appoint a committee to consider the question of reconstructing the Company. They would have to act promptly because they had the debenture holders on their back, and they had justification for hoping that they would take payment in any form in cash. This was a matter for the shareholders themselves. The liquidators could not bring forward a scheme, but they would give the information and help they could.—After some discussion, a committee was appointed, on the motion of Mr. F. Taylor, seconded by Mr. John Rylands, "to make inquiries into the present position of the Company, and make a report and recommendation to the shareholders at a meeting to be held in about a month."

TAMARUGAL NITRATE COMPANY, LIMITED.

A final meeting of the Tamarugal Nitrate Company, Limited (liquidation), was held on Thursday last week, at Winchester House, Old Broad-street, E.C., when the liquidator (Mr. F. H. Evans) presented accounts showing the manner in which the winding up had been conducted.

THE INSPECTION OF EXPLOSIVES.

The report of Colonel Majendie, Colonel Ford, and Captain Thomson, Government inspectors of explosives, on the working of the Explosives Act, 1875, during 1894, has been published. The report states that the condition of the factories and magazines affected by the Act is generally decidedly improved. The number of deaths in accident by fire or explosion in manufacture was two only, which was very much below the average (4.6) for the past ten years. The figures show, according to inspectors, an extraordinary and most satisfactory contrast with those given before the Act came into operation; for not only has the number of factories greatly increased, but also the amount of the output of individual factories and the number of hands employed. Moreover, the risks attending the manufacture of wholly new explosives with which a large proportion of the new factories are concerned, are less well known. These satisfactory results have been accomplished, the report states, without any undue or inconvenient interference with trade. The growth in the number of factories for explosives, from when the Act came into force to 130 at the present time, and magazines, from 199 to 380, is mentioned in support of this view. Complaints that the restrictions fettered competition with foreign make have now become extremely rare, and since the English Act was passed other countries have introduced laws and applied regulations affecting explosives based in some degree on the English laws, but a general rule of greatly increased stringency.

The inspectors see no grounds for modifying the favourable opinion they have previously expressed as to the sound practical working of the system of licensing as laid down by the Act. They recently invited expressions from the English manufacturers as to the system of regulation introduced by the German Government for insuring the identification of individual cartridges, with the result that the inspectors have decided against the system, in view of its expense and inconvenience, of the steps already voluntarily adopted by some manufacturers for identifying at any rate the packages issued by them, and the facility with which the elaborate and costly precautions now apparently be defeated. With regard to irregularities in factories, proceedings are now of rare occurrence. The inspectors comment on the surprising demand for the goods known as Oriental fireworks for China and Japan. The number of accidents by fire or explosion, which the department has had cognizance during the year was 10, causing, so far as is known, 28 deaths and injuring 91 persons. The number of accidents shows a considerable decrease, and nearly two thirds of the accidents occurred in the use of explosives and under conditions to which the controlling provisions of the Act do not apply. The various explosions at the Government works at Waltham Abbey are noticed, and extracts are made from various reports thereon. A letter from Dr. Dupré, chemical adviser of the department, published in *The Times* and the *C. T. J.*, on the subject of the spontaneous combustion of a lamp-shade, is reproduced in the report. The various outrages in England and abroad are noticed, and it is remarked that the year 1894, like the two preceding years, was noticeable for the extraordinary number and grave character of the outrages perpetrated abroad, particularly in France, in furtherance of political, social, industrial, or personal objects.

FATALITY AT A PAPER MILL.—A young man employed at the Buckland Paper Mill, Dover, was killed last week, his head being crushed in the machinery.

EXPORTS OF ALKALI AND BLEACH.

Following figures, which are taken from the official foreign and colonial statistics of the United Kingdom, give the amount of alkali and bleaching materials shipped to the undermentioned during the month of April, 1895, as compared with the month in 1894:—

ALKALI.

Port.	1894.	1895.	1894.	1895.
	Cwts.	Cwts.	£	£
.....	24,167	7,268	9,444	2,277
and Norway	9,198	14,992	1,823	3,407
.....	14,771	19,103	5,101	5,580
.....	8,678	8,022	1,777	1,883
.....	4,005	3,635	1,555	1,207
Canaries	17,358	27,765	7,430	9,623
.....	17,787	17,676	7,291	5,583
ates	235,686	273,836	56,695	59,510
ia	12,737	16,261	4,823	4,704
orth America ..	32,904	12,839	9,122	3,020
untries	88,699	83,214	27,080	23,694
.....	465,990	484,611	132,147	120,488

BLEACHING POWDER, ETC.

Port.	1894.	1895.	1894.	1895.
	Cwts.	Cwts.	£	£
ates	71,155	76,020	28,685	27,848
untries	35,246	38,698	13,424	14,338
.....	106,401	114,718	42,109	42,186

Trade Notes.

AL.—We learn that the business formerly carried on at 5, -steet, Liverpool, under the style of Messrs. Chas. Good- o., will in future be conducted under the title of Messrs. and Bradly at the same address.

ING SULPHURIC ACID PLANT.—Work has been begun on ations for a large sulphuric acid plant at Peru, Ill., U.S.A., erated in connection with the Illinois Zinc Works at that he works will be provided with all the latest improvements.

DUCTION STATISTICS.—The average production of ice, by the expansion of cold air, in what are known as cold air ice is, according to the *Scientific American*, $2\frac{1}{2}$ tons of ice per d. Other machines vary from $2\frac{1}{2}$ to $12\frac{1}{2}$ tons of ice per d.

ER OF AN AMERICAN VITRIOL WORKS.—The Chappell and Fertilizer Company, of Baltimore, U.S.A., has sold its acid works at Hawkins Point, on the Patapsco River, and its acts and business to Davidson and Co., whose works were by fire seven months ago. The consideration was £8,000.

ATED BY CARBON DIOXIDE.—The Burnley coroner on nvestigated a shocking death from suffocation at Massey's John Bland, a married man employed there as a labourer, ying a vat containing two feet of yeast and about an inch and quor. On removing the peg to let off the liquor he seems llen into the barn and been suffocated.

DALTON'S MEMORIAL.—The memorial stone which was in preparation, and to which special reference was made in mns early in the year, has been completed and duly inserted ll of the cottage in which the great philosopher was born. llow freestone, and bears the simple legend given in our issue y 19th last.

AN ENTERPRISE IN RUSSIA.—Belgian capital, which for e past has specially participated in the promotion of the iron in Russia, is being directed to enterprises in the Donetz The Burgess Steel Works Company is said to be establishing ng works and a shop for railway materials in the Donetz nd Liège capitalists propose to erect, also in South Russia, a rks. The Awans (near Liège) Machine and Boiler Works , in combination with the Liège Banque d'Escompte et de Courants, is also stated to have purchased the ironworks rected by Mr. C. Scheibler in Debaltzeno, with a view to nsion. It is further stated that the Ogrée Company, one of t engineering concerns of the Liège district, will shortly ironworks in Russia.

PETROLEUM BURNING FATALITY.—Eliza Oliver, of Royston Terrace, Nottingham, succumbed recently to injuries received in a petroleum lamp accident. Her husband is a miner, and had to be at work early, and the unfortunate woman tried to extinguish the lamp in the bedroom by blowing down the chimney, with the result that an explosion followed. The husband picked up a child who was in the room and carried it to a neighbour's, and on his return found his wife in flames, from which she sustained injuries which caused her death.

ANOTHER PETROLEUM FIRE.—About half-past twelve o'clock on the afternoon of Thursday, 30th ult., a fire broke out in the petroleum oil stores of William Winn, Sadler-street, Upper Lloyd-street, Moss Side, Manchester. The Moss Side Local Board brigade were soon in attendance, and found a number of barrels of oil on fire in the yard. The backs of two houses adjoining were ignited, and the fire had got hold when the Manchester Fire Brigade, under Mr. Savage, arrived. A capital force of water was got to work, and in about an hour's time the outbreak had been extinguished. The oil stored in the yard was destroyed, and the roofs and back parts of the houses seriously damaged.

WHAT WAS THE FLASHPOINT?—A singular accident occurred last week in Spring-hill, Birmingham. A carman in the employ of the Midland Railway Company was delivering at an oil dealer's shop six 42-gallon barrels of petroleum. During his temporary absence in the cellar of the shop the straw at the bottom of the dray became ignited, and in an incredibly short time the whole quantity of oil was on fire. The horse attached to the dray became terrified by the heat and the glare, and dashed up the roadway, along which ran a burning stream of oil. Ultimately the horse and dray were stopped by a policeman and drawn on to a piece of waste ground, where the animal, which was badly burned, was liberated. The dray was entirely consumed.

RIVAL COTTONSEED CLEANING MACHINES.—At the Lancashire Chancery Court, St. George's Hall, Liverpool, last week, before Vice-chancellor Robinson, the adjourned case of *Boxwell v. Cochran*, which was a dispute as to the patent rights affecting machines for the cleaning of American and Brazilian cottonseed, came on for hearing. The plaintiff, who trades as the International Cottonseed Cleaning Company, of Liverpool, is the proprietor of a patented machine known as the Crawford machine, which he has had in use for several years. The defendant, who is connected with the Acme Engineering Company, of Park-lane, Liverpool, is the proprietor of the American machine which the plaintiff claims was an infringement on his patent rights. Mr. Lawrence and Mr. Astbury appeared for the plaintiff, and Mr. Moulton, Q.C., Mr. T. R. Hughes, and Mr. J. Rutherford for the defendant. After the case had proceeded for some hours Mr. Moulton suggested a settlement, and after some considerable discussion terms of settlement were arranged by which the defendant consented to an injunction with regard to No. 1 machine, each party paying his own costs, and it was also agreed that the solicitors to the respective parties should sign a memorandum in the registrar's book to the following effect:—The plaintiff admitted that a machine constructed with brush working against brush and not filled up with hard material so as to form an abrasive surface is not an infringement of his letters patent. The defendant admits that the first machine brought over by him was an infringement.

THE ALLEGED NOXIOUSNESS OF THE WELSBACH LIGHT.—On the occasion of the recent acquisition of the electricity works at Cheltenham by the Corporation, Mr. W. H. Preece is reported to have spoken in disparagement of the Welsbach incandescent gas-light, which he asserted was "injurious to health." According to a local paper, he went on to say that when people found this out, and wanted a good as well as a clean and wholesome light, they would not go back to the ordinary gas-burner, but would go to the Cheltenham Corporation to get it. This statement, says the "Journal of Gas Lighting," coming from a responsible Government official, naturally roused the general manager of the Incandescent Gas-Light Company, Limited (Mr. Julius Moeller), who promptly refuted, in a letter to the said local paper, the assertion as to the injuriousness of the Welsbach light. He quoted, in his support, the report of Professor Renk, the Director of the Hygienic Institute of the University of Halle, to the effect that if there is any carbonic oxide present in the products of combustion of the Welsbach burner, it is in far too small a quantity to be injurious to health; and he backed this up by the published opinions of Professor Carlton Lambert, M.A., F.R.A.S., of the Royal Naval College, Greenwich, and of the *Lancet* Commission. In face of reports from such authorities, Mr. Moeller cannot conceive on what grounds Mr. Preece stigmatised the Welsbach light as "injurious to health." He can easily understand that it is injurious to the health of the electric lighting industry; and he supposes it was a certain feeling of annoyance, caused by the appreciation of this fact, which led Mr. Preece to make the statement he complains of. We agree with him that when responsible officials descend to misrepresentation as to rival concerns, the limit of one's patience is reached.

WEAR NAVIGATION RETURNS.—The River Wear Commissioners' trade return for the month of April shows that during the month 511 vessels, of 211,781 tons register, cleared from Sunderland, carrying 333,367 tons of coal, of which 180,215 tons were shipped in the South Docks, 153,144 tons in the river, and only 8 tons in the North Dock. This shows an increase of 20 vessels and a decrease of 6,000 tons of coal on April, 1894. The total revenue of the port amounted to £10,607. 0s. 2d., a decrease of £875. 13s. 6d. on the revenue of April last year.

THE TRADES' OPINION ON MARGARINE.—In order to obtain the opinions of retail dealers upon the subject of margarine legislation now under the consideration of a Select Committee of the House of Commons, the Liverpool and District Grocers' Association recently addressed a number of interrogatories to its members. These were sent to 213 traders having 503 shops, and the following is a synopsis of the resulting answers. On the question whether or not the sales of blended butter or margarine, known as "mixtures," should be abolished, 103 firms answered "No" and 29 "Yes," while 115 were against and 17 for the giving to margarine a different colour from what it bears at present. Against the compulsory making up of margarine in 1lb. and ½lb. blocks, there were 116 answers, 15 being in favour. Against the repeal of the section of the Margarine Act making assistants as well as employers liable for offences under the Act there were 108 answers, and 21 in favour of the repeal, whilst 96 desired its extension to the Food and Drugs Act, and 19 were against the extension. On the question of requiring retailers of margarine to take out licences, 103 firms voted in the negative and 23 in the affirmative. In favour of making an invoice a sufficient warranty of genuineness, 128 were in favour and only three against. Where mixtures are sold with a printed statement describing them as such, 107 firms were of opinion that no verbal declaration to that effect should be required by statute, whilst 24 thought it should be. Upon the question whether or not summonses for the sale of margarine when butter is asked for, but when the provisions of the Margarine Act have been complied with, should be issued under the Food and Drugs Act, there were 107 answers to the effect that they should not, whilst 24 said that they should be so issued.

FOREIGN REMITTANCES.

Owing to the inconvenience created by the various ways in which foreign subscriptions are remitted, we respectfully beg to inform subscribers that a *Crossed Money Order* is the most satisfactory method of remitting, both for them and ourselves. In the case of a Money Order, a letter advising us of same should always be sent, otherwise, owing to post-office formalities, much delay in tracing and acknowledging foreign remittances is inevitably entailed in this country.

Market Reports.

REPORT ON MANURE MATERIAL.

The market is as usual at Whitsuntide of a holiday character, and there is very little to comment upon. The position of mineral phosphates remains exactly as last reported. It is reported that a cargo of River Plate bones for shipment has been sold at £4 5s., delivered direct L.R. port, and this may be taken as the present nearest value. For autumn shipment, £4 7s. 6d. now required for crushed Kurrachee bones, and this price already paid. For East Indian Bone Meal, £4 7s. 6d. to £4 10s. now asked, but so far buyers don't follow the advance. Nitrate of Soda is quiet but steady. Spot price for ordinary quality is 8s. 4½d. per cwt. of good 8s. 3d., and of refined 8s. 4½d.

MISCELLANEOUS CHEMICAL MARKET.

The alkali market is rather quiet again, business this week being no doubt affected to some extent by the Whitsuntide holidays, and the general stoppage of Lancashire and Yorkshire mills. There are no changes to record in values. Caustic soda, spot delivery, is quoted:—40-ton lots, £4 10s. Liverpool, 77½% £9 7s. 6d.; 74½% £8 7s. 6d.; 70½% £7 10s.; 66½% £6 10s. per ton. The same quotations are made £4 10s. Glasgow and Tyne. Alkali 58½% is unchanged at £3. (buss) makers' works. Soda crystals quiet at £2 16s. bags. Leblanc soda ash nominal at £1 to 1½ per bag, in casks £1 10s. In chlorate of potash there is no further change, price meantime having steadied down at 3d. per lb., chlorate of soda 6½d. Recovered sulphur, £4 10s. 6d. per ton on rails. Sulphate in bulk, 17s. 6d. per ton Northwich, Widnes, and Manchester districts, and 17s. 6d. to 20s. £4 10s. Glasgow and Tyne, in bulk. Sulphate of copper steady at 1s. 1½s. £100. Acetates quiet all round, and no changes in price, high brown acetate of lime is said to be firmer. Potash, caustic, and carbonate are in good demand, and prices are steady. White

powdered arsenic very scarce at £14. 15s. to £15. per ton Gunter Nitrate of soda flat, business being done at 8s. to 8s. 1½d. per cwt. Prussiate of potash quiet at 7½d. to 8d. per lb. In miscellaneous goods business during the week has been quiet.

THE COPPER MARKET.

Messrs. Harrington and Co., in their fortnightly report dated May 17, state:—

Chili charters for the past fortnight are cabled as 1,200 tons making the total since 31st December last 8,350 tons, against 6,810 tons same time last year. Exchange 17d.

During the past fortnight we have had a very excited market for G.M.B.'s, owing to all kinds of rumours being circulated regarding producers curtailing the output of copper, and various other reasons causing an advance in values. All this made the market quite rampant and the business done from day to day was very important, reaching several thousand tons; but within the last few days the market has turned, and the decline has been severe, as £44. 16s. 3d. cash and £45. 5s. three months, were paid on the 13th, since when the fall continued, and to-day £41. 18s. 9d. and £42. 7s. 6d. respectively was paid closing with buyers at £42. 5s. cash and £42. 13s. 9d. three months. This collapse in copper is said to be on account of the breakdown of the producers' negotiations, the Americans now declining to adhere to the proposed agreement.

The total stocks in Liverpool, Swansea, London, and Havre 50,299 tons, against 50,239 tons on the 1st inst., showing an increase of 60 tons for the fortnight. The stocks include about 1,000 tons of copper sold, but not yet delivered to smelters. The visible supply for the fortnight is 55,018 tons, against 54,438 tons on the 1st inst. showing an increase of 580 tons. Refined and manufactured sorts quiet, quotations being: Tough cake, £46. 10s. to £47. 5s.; best sort £47. 5s. to £47. 15s.; Indian sheets, £50. to £51.; strong sheet £52. to £53.; and yellow metal sheets, 4½d. to 4½d. per lb. Sales of furnace material only comprise 11 tons Spanish precipitate on private terms; and 37 tons Chili ore, at 7s. 9d. per unit.

TAR AND AMMONIA PRODUCTS.

Benzols are a shade firmer, but the advance is very uncertain. There is a slightly easier tone in carbolic acids, 60% crude being quoted 1s. 1½d. and 40% crystals 6½d. Crude naphtha is very quiet, the price, which is purely nominal, being quoted 5d. to 6d., according to local solvent is the turn easier at 1s. 1d. Creosote pitch, and anthracene unaltered.

Sulphate of ammonia continues firm, though business has been interfered with by the holidays. The attitude of the makers points to a further advance, and certainly a maintenance of present value for the moment. Quotations are:—London, outside makes, £10., Hull £10. and Leith £9. 18s. 9d. to £10. Forward has been done at £10. in the north.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron, steady: Scotch warm closed at 43s. 1½d., Middlesbrough 42s. cash, and best 43s. 5d. Copper, firm: Chili bars, G. O. B.'s and G. M. B. closed at £43. 16s. 3d. to £43. cash, and £43. to £43. three months. Tin, easier: Straits closed at £64. 5s. £64. 7s. 6d. cash, and £65. 5s. to £64. 15s. three months. Australian, £65. 7s. 6d. English ingots, £68. 10s. Lead, 96 Spanish, £10. 7s. 6d. to £10. 10s.; English, £10. 10s. to £10. 12s. Silesian spelter: ordinary, £14. 17s. 6d. Nickel, 1s. 2½d. Antimony £32. Quicksilver: first hands, £7. 10s.; second hands, 8s. 6d. Copper shares, steady: Cape, 2 to 2½; Copiapó, 2 to 2½; Libiola, 3½ to 3½; Mason and Barry, 2½ to 3½; Rio Tinto, 2 to 16½; Tharsis, 4½ to 5½.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.
OILS.—Palm oil is steady, but rather quiet. Olive is firm, price remaining practically unaltered and strong. Linseed is steady and moderate request. Cottonseed is without any change in either price or price for both Liverpool refined and American. Castor oil is fairly good demand for good secondals Calcutta. First pressure Fire is unaltered. Resin continues to rule dear and suffers in demand consequence. Tallow is firm and apparently not greatly affected by the holiday quietness. Spirits of turpentine are firm, though they rather less doing. Petroleum continues at current prices, viz.: American 6½d. to 9d., and Russian refined 6d. per gallon.

COLOURS are steady, without alteration in price. Ochres: Oxfordshire, common, £10., medium, £12., best, £14.

ire, common, 40s.; medium, 50s., best, 60s.; Welsh, best, 50s., and common, 18s.; Irish, Devonshire, 40s. to 60s., J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Umber: quiet; Devonshire, 50s. to 55s. White lead, £16. Red lead ed. Venetian red, £6. to £10. Cobalt: Prepared oxide, black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2, Oxide of iron: Common, £7.; medium, £10.; finest, £20. le, £22. 10s. to £25.

LL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

Business here continues quiet. The principal imports up to compared with same time a year ago, are:—Linseed, 222,226 qrs., 183,792 qrs. Rapeseed, 60,398 qrs., against 54,363 qrs. ed, 88,907 tons, against 109,059 tons. Olive oil, 5,525 casks, 1,724 casks. Rape oil, 4,503 casks, against 3,608 casks. Tur- 4,306 barrels, against 4,352 barrels. Linseed oil closes firm, ers at 20s. 3d. naked spot. June-Aug. offer at 20s., and Sept. s. 6d. Boiled and refined, £1. to £1. 10s. per ton extra. Ex- he week, 2,680 cwt. Refined cotton oil has fallen about 10s. closing with sellers at 16s. 7½d. naked spot. June-Aug. sold 0½d., and Nov.-April at 17s. 3d. Crude, on the spot, 15s. 1½d. Casks 17s. 6d., and ordinary barrels 27s. 6d. per ton extra. of refined for the week, 2,080 cwt. Spirits of turpentine, 23s. s. Olive oil unchanged. Castor oil is firmer, 2½d. per lb. for sure. Boiled drying oil, £11. per ton. Wool cream for carding, £10. per ton. Liquid scouring soap for wool washing, ton. Cod oil unchanged. Herring oil scarce. TS.—Linseed cakes in quiet demand, and quoted from £5. 10s. s. per ton according to make. Cotton cakes, £3. to £4. per ack Sea rape cakes, £2. 12s. 6d. per ton. TS.—Makers here close their works from Saturday until lay morning. Prices unchanged.

LIVERPOOL MINERAL MARKET.

the week the market has ruled steady with no material y, but trade has fallen off somewhat on account of the anti- hitsuntide holidays. Manganese: Arrivals this week have y; fair quantities have been drawn from stock, but prices y altered. Ground manganese continues in steady demand at , £10., and £12. 10s. per ton, according to quality. ferous ore is quiet at 15s. to 17s. 6d. per ton, c.i.f., in cargoes. continues in strong demand, especially Irish Hill brand for m purposes, and prices remain firm at 20s. per ton for first 16s. per ton for second quality, and 12s. per ton for third f.o.b., in cargoes. Chrome ore: There have been no arrivals k; all stocks are cleared and prices remain firm at 75s. 6d. for 40% lump ore, and 110s. to 115s. per ton for 50% ore. alk: Arrivals continue to be steady, mostly however going o consumption, so that prices remain firm at 70s., 80s., 90s., per ton for "Angel White" and "Gold Medal" brands. o still continues to sell freely at £6. per ton for qualities suit- founders and lubricating purposes, with other qualities in n, according to grade. Arsenic continues firm at about £16. ton. Carbonate of barytes continues in rather quiet demand, s are firm: smalls at 70s., and lump at 85s. to 100s. per ton, y to grade. Sulphate of barytes is unaltered, the demand lump and powdered continuing steady; prices for powdered at: No. 1, 60s. to 70s. per ton; No. 2, 55s., and No. 3, to 50s. per ton. Fuller's earth is in increasing demand, y for the better qualities: lump, 50s. to 55s. per ton; im- powder, 80s.; and ground about 55s. per ton. Ochres and remain unaltered, J.C. ochre being done at 60s. per ton, and yigated umber at 40s. to 60s. per ton, f.o.r., in bags.

TYNE CHEMICAL REPORT.

TUESDAY.

cals show a rather fuller demand, and shipments continue to good. Soda crystals, owing to the hot weather, are steadier, ow quoted at £1. 17s. 6d. per ton gross weights locally. Bleach- er and caustic soda unaltered. Sulphur quiet at £3. 17s. 6d. ing powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, astic soda, 76/77%, £9. 10s. per ton, nett; do., 70%, £7. 15s. ett; recovered sulphur, 2 cwt. bags, £3. 17s. 6d. per ton, nett; , 48%, £3. 15s. per ton, nett; do., 52%, £4. 2s. 6d. per ; do., 56%, £4. 10s. per ton, nett; alkali, 36%, £2. 15s. nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. ton, nett; do., 52%, £5. 5s. per ton, nett; hyposulphite of

soda, 5-7 cwt. casks, £6. per ton, nett; do., 1 cwt. kegs, £6. 12s. 6d. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £1. 17s. 6d. per ton, gross weight; do., 2 cwt. bags, £1. 17s. 6d. per ton, nett; chlorate of potash, 5¼d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £4. 2s. 6d. per ton, nett; blanc fixe, £7. 10s. per ton, nett; chloride of barium, £7. 10s. per ton, nett; carbonate of alumina, £28. 15s. per ton, nett; aluminate of soda, £33. 15s. per ton, nett; in 5 ton lots, £28. 10s. per ton, nett.

SALT.—South Durham salt steady at 9s. to 9s. 6d. per ton, f.o.b. Tees.

COALS.—The coal trade is now fairly active, and with "turns" better filled at the Steam Coal Collieries, prices are also firmer. Coke is steady, and there are more transactions for "forward." Best North-umbrian steam, 8s. 9d. to 9s. 3d. per ton; second qualities, 7s. 9d. to 8s. 3d. per ton; small steam, 3s. 6d. to 3s. 9d. per ton; bunker coals, 6s. 3d. to 7s. 3d. per ton; household coals, dull, 10s. to 11s. per ton; gas coals, 6s. 6d. to 6s. 9d. per ton; coke, steady, 13s. 6d. to 14s. per ton.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

The position of sulphate of ammonia just at present is matter of diverse opinion on the part of dealers, but that it has appreciably mended is on all hands admitted. For one lot as high as £10. 5s. spot was procured, but this was a special parcel in double bags for a particular consignment, and it did not stand as representative of the ordinary market. Some dealers have not paid as yet higher than £9. 17s. 6d., but the true spot value at the present moment is probably not under £10. Towards the close of last week one maker found a forward purchaser (August to March) at £10. 10s., and booked him.

General chemicals continue in a pretty even course, without any animation, but with values tolerably well maintained all over. Soda crystals are reported as in reduced stocks. Bleaching powder is quiet at the old quotations. Shipping demands are in fair bulk. Chloride of potash is slightly firmer, and sulphate of copper is steady at last week's figure.

Mineral oils and paraffins are without change as to price and without special feature, except a slight further mending in lubricants. Makers are busy, but almost solely for stocking.

Chief prices current are:—Soda crystals, 35s. nett, Tyne; soda ash, 48/52°, £3. 15s. to £4. 5s. nett, Tyne; white alkali, 48/52°, £4. 10s. to £5. 5s. nett, Tyne; alum in lump, £5. 10s. nett, Glasgow; caustic soda, white, 74° £9., 70/72° £7. 15s., 60/62° £6. 15s., and cream 60/62° £6. 10s., all nett, Liverpool; bleaching powder, £6. 5s. to £7., nett, Tyne; saltcake, 17s. 6d.; borax, English refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 5¼d. less 5%, Liverpool; nitrate of soda, 8s. 3d. to 8s. 6d.; sulphate of ammonia, £10. prompt f.o.b. Leith; salammniac, first and second white, £39. and £37. nett, any port; sulphate of copper, £15. 12s. 6d., less 5%, Liverpool; paraffin scale, hard 2½d.; and soft, 1½d. to 2½d. per lb.; paraffin wax 120° semi-refined, 2½d. to 2¾d.; paraffin spirit (naphtha), 5d. to 6d. per gallon; paraffin oil (burning), No. 1, 6½d. and crystal 6¾d. at works, for Scotch buyers (English sales 1d. lower); ditto (lubricating) 865° £4. 5s.; 885° £4. 10s. to £5., and 890/895° £5. to £5. 10s. Week's imports of sugar at Greenock were 11,100 bags beet refined, 27,301 bags beet unrefined, and 1,500 bags beet refined.

New Companies.

Acari Copper Mines Syndicate, Ltd.—CAPITAL £20,000., in £10 shares. This company has been formed to acquire certain mines, situate near Port Lomas, Peru, and to develop the same.

Robert Ingham Clark & Co., Ltd—CAPITAL £300,000., in £10. shares. This company has been formed to acquire the business of varnish, Japan and colour manufacturers and merchants, now carried on by R. I. Clark, at West Ham Abbey, Essex, London, and Paris. The subscribers to the memorandum of association are:—R. I. Clark, 6, St. Helen's-place, E.C., varnish manufacturer; Mrs. R. I. Clark, 6, St. Helen's-place, E.C.; F. W. F. Clark, 6, St. Helen's-place, E.C., varnish manufacturer; R. F. Clark, 6, St. Helen's-place, E.C., under-graduate; S. N. Griffiths, 6, St. Helen's-place, E.C., varnish manufacturer; J. Pettigrew, F.I.C., 6, St. Helen's-place, E.C., chemist; H. P. Edwards, 51, Bedford-square, W.C., newspaper proprietor.

Wenger's, Ltd.—CAPITAL £50,000, in shares of £10. each. This company has been formed to acquire as a going concern, and to carry on the business of manufacturers of colour and chemical, and pottery requisites, formerly prosecuted by A. F. Wenger, at Hanley, Staffordshire. The subscribers to the memorandum of association are:—A. F. Wenger, Newcastle, Staffordshire; Mrs. A. F. Wenger, Newcastle, Staffordshire; G. Jakob, Hanley, Staffordshire; W. A. Cowleshaw, Hanley, Staffordshire; A. Bump, Nyon, Switzerland; C. Wenger, Milan; F. Wenger, Lausanne, Switzerland.

Manningham Dye Works Co., Ltd.—CAPITAL £6,000, in £1. shares. This company has been formed to acquire and carry on the dyeing, &c., business of Rhodes Bros., near Bradford, Yorkshire. The subscribers to the memorandum of association are:—J. Rhodes, 86, Whetley Hill, Manningham, dyer; E. Harbisher, Heatherfield Terrace, Veadon, engineer; C. Hardisty, 22, Seal-street, Bradford, dyer's traveller; A. Rhodes, 33, Church-street, Manningham, dyer; H. L. West, 53, Garfield Avenue, Manningham, book-keeper; W. Lingard, Bollin Woods, Bradford, traveller; J. Casey, 23, Toller-lane, Manningham, clerk.

Gazette Notices.

PARTNERSHIP DISSOLVED.

J. A. LEE, F. J. LEE, and A. B. LEE, electrical and general engineers and metal workers, Shrewsbury, under the style of Lee, Sons, and Co., so far as regards A. B. Lee.

BANKRUPTCY ACTS, 1883 and 1890.

Receiving Order.

BRIERLEY, H. J., J. W., and F., trading as T. Brierley and Sons, Densley Dale, Huddersfield, dyers.

The Patent List.

This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

Precipitating and Filtering Tanks. T. B. Wilson. 9,903. May 20.
Liming Hides, &c. C. Hertmeyer. 9,953. May 20.
Improved Pigment. H. Scaward. 9,957. May 20.
Enamelling on Metals. F. Gomm. 9,973. May 21.
Cottonseed De-linters. P. A. Newton. 10,014. P. A. Newton. 10,015. May 21.
Drying Superphosphates, &c. W. P. Thompson. 10,011. May 21.
Attaching Silicate Cotton, Asbestos, &c., to a Metallic Backing. D. Anderson and Son, Ltd., and H. Gregg. 10,039. May 21.
Mortar Analysis. J. Patchett. 10,089. May 22.
Manufacture of Caustic Alkalies and Alkali Carbonates. N. Bauman and W. von Baranoff. 10,128. May 22.
Decomposing Substances Susceptible of Electrolytic Treatment. G. G. M. Hardingham. 10,134. May 22.
Cement Concretes. S. G. Bird and J. Wright. 10,207. May 23.
Working Carburetted Water Gas Plant on a New Method. A. G. Glasgow and J. A. Norcross. 10,229. May 23.
Manufacture of Cyanides. S. Trivick. 10,230. May 23.

IMPORTS OF CHEMICAL PRODUCTS

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.		Daily.		30 Co.		Lancashire.		Denmark.		McDonnell & Co.		U. States.	
Hull sailing July 25th.		Belgium.		Spain's W. L. L.		France.		Bailey & Leatham		A. F. White & Co.		30	
Belgium.		Belgium.		Spain's W. L. L.		France.		Crosse & Blackwell		J. Greig		245	
Belgium.		Belgium.		Spain's W. L. L.		France.		Beresford & Co.		Blyth, Greene & Co.		50	
Belgium.		Belgium.		Spain's W. L. L.		France.		Arbuthnot, Latham & Co.		Elkan & Co.		148	
Belgium.		Belgium.		Spain's W. L. L.		France.		H. J. Perlbach & Co.		F. Huth & Co.		200	
Belgium.		Belgium.		Spain's W. L. L.		France.		L. & I. D. Jt. Co.		L. & I. D. Jt. Co.		200	
Belgium.		Belgium.		Spain's W. L. L.		France.		Park, MacLachlan & Co.		W. Shekott		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Benckendorff & Co.		L. & I. D. Jt. Co.		1,200	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. P. Alpe & Co.		L. & I. D. Jt. Co.		1,143	
Belgium.		Belgium.		Spain's W. L. L.		France.		Baxter & Hoare		P. O. Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Kitchen, Ltd.		R. Waters		50	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Beresford & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Leach & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		L. & I. D. Jt. Co.		Prop. Bull. Wf.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Adam Bros.		Hicks, Nash & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Barber & Co.		Dunlop Bros. & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Chmeln's Wf, Ltd.		W. Harrison & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Kitchen, Ltd.		R. Waters		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Beresford & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Leach & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		L. & I. D. Jt. Co.		Prop. Bull. Wf.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Adam Bros.		Hicks, Nash & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Barber & Co.		Dunlop Bros. & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Chmeln's Wf, Ltd.		W. Harrison & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Kitchen, Ltd.		R. Waters		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Beresford & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Leach & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		L. & I. D. Jt. Co.		Prop. Bull. Wf.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Adam Bros.		Hicks, Nash & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Barber & Co.		Dunlop Bros. & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Chmeln's Wf, Ltd.		W. Harrison & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Kitchen, Ltd.		R. Waters		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Beresford & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Leach & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		L. & I. D. Jt. Co.		Prop. Bull. Wf.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Adam Bros.		Hicks, Nash & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Barber & Co.		Dunlop Bros. & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Chmeln's Wf, Ltd.		W. Harrison & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Kitchen, Ltd.		R. Waters		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Beresford & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Leach & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		L. & I. D. Jt. Co.		Prop. Bull. Wf.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Adam Bros.		Hicks, Nash & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Barber & Co.		Dunlop Bros. & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Chmeln's Wf, Ltd.		W. Harrison & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Kitchen, Ltd.		R. Waters		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Beresford & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Leach & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		L. & I. D. Jt. Co.		Prop. Bull. Wf.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Adam Bros.		Hicks, Nash & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Barber & Co.		Dunlop Bros. & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Chmeln's Wf, Ltd.		W. Harrison & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Kitchen, Ltd.		R. Waters		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Beresford & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Leach & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		L. & I. D. Jt. Co.		Prop. Bull. Wf.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Adam Bros.		Hicks, Nash & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Barber & Co.		Dunlop Bros. & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Chmeln's Wf, Ltd.		W. Harrison & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Kitchen, Ltd.		R. Waters		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Beresford & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Leach & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		L. & I. D. Jt. Co.		Prop. Bull. Wf.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Adam Bros.		Hicks, Nash & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Barber & Co.		Dunlop Bros. & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Chmeln's Wf, Ltd.		W. Harrison & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Kitchen, Ltd.		R. Waters		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Beresford & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Leach & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		L. & I. D. Jt. Co.		Prop. Bull. Wf.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Adam Bros.		Hicks, Nash & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Barber & Co.		Dunlop Bros. & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Chmeln's Wf, Ltd.		W. Harrison & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Kitchen, Ltd.		R. Waters		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Beresford & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Leach & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		L. & I. D. Jt. Co.		Prop. Bull. Wf.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Adam Bros.		Hicks, Nash & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Barber & Co.		Dunlop Bros. & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Chmeln's Wf, Ltd.		W. Harrison & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Kitchen, Ltd.		R. Waters		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Beresford & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Leach & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		L. & I. D. Jt. Co.		Prop. Bull. Wf.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Adam Bros.		Hicks, Nash & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Barber & Co.		Dunlop Bros. & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Chmeln's Wf, Ltd.		W. Harrison & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Kitchen, Ltd.		R. Waters		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Beresford & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Leach & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		L. & I. D. Jt. Co.		Prop. Bull. Wf.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Adam Bros.		Hicks, Nash & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Barber & Co.		Dunlop Bros. & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Chmeln's Wf, Ltd.		W. Harrison & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Kitchen, Ltd.		R. Waters		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Beresford & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Leach & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		L. & I. D. Jt. Co.		Prop. Bull. Wf.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Adam Bros.		Hicks, Nash & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Barber & Co.		Dunlop Bros. & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Chmeln's Wf, Ltd.		W. Harrison & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Kitchen, Ltd.		R. Waters		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Beresford & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Leach & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		L. & I. D. Jt. Co.		Prop. Bull. Wf.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Adam Bros.		Hicks, Nash & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Barber & Co.		Dunlop Bros. & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Chmeln's Wf, Ltd.		W. Harrison & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Kitchen, Ltd.		R. Waters		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Beresford & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Leach & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		L. & I. D. Jt. Co.		Prop. Bull. Wf.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Adam Bros.		Hicks, Nash & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Barber & Co.		Dunlop Bros. & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Chmeln's Wf, Ltd.		W. Harrison & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Kitchen, Ltd.		R. Waters		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Beresford & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Leach & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		L. & I. D. Jt. Co.		Prop. Bull. Wf.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Adam Bros.		Hicks, Nash & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Barber & Co.		Dunlop Bros. & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Chmeln's Wf, Ltd.		W. Harrison & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Kitchen, Ltd.		R. Waters		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Beresford & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Leach & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		L. & I. D. Jt. Co.		Prop. Bull. Wf.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Adam Bros.		Hicks, Nash & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Barber & Co.		Dunlop Bros. & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Chmeln's Wf, Ltd.		W. Harrison & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Kitchen, Ltd.		R. Waters		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Beresford & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		A. & W. Neslitt		Leach & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		L. & I. D. Jt. Co.		Prop. Bull. Wf.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Adam Bros.		Hicks, Nash & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Barber & Co.		Dunlop Bros. & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		Chmeln's Wf, Ltd.		W. Harrison & Co.		100	
Belgium.		Belgium.		Spain's W. L. L.		France.		J. Kitchen, Ltd.		R. Waters		100	
Belgium.													

White Lead—
Germany, 4 kgs. W. B. Dick & Co.
Holland, 60 cks. T. & W. Farmiloe
Germany, 12 H. Lambert
Holland, 8 Colthurst & Harding
Wolfram Ore—
Queensland, 8 t. H. Bath & Son
Wood Pulp—
Germany, 1,000 pkgs. E. J. & W. Goldsmith
Sweden, 300 J. Barber & Co.
244 C. Christophersen & Co.
875 C. Anderson
Zinc Oxide—
Holland, 107 brls. M. Ashby, Ld.
500 cks. Soundy & Sons
Germany, 100 J. Matton
7 Beresford & Co.
15 J. Matton

LIVERPOOL.
Week ending May 23rd.
Acetic Acid—
Rotterdam, 17 brls.
Albumen—
Naples, 13 bgs.
Antimony Ore—
Tampico, 84 sks.
Asbestos—
Quebec, 204 bgs.
Barytes—
Antwerp, 50 bgs.
Bone Ash—
Zarate, 508 bgs. J. Nelson & Sons, Ld.
Boracic Acid—
Leghorn, 15 cks.
Boracite—
Panderma, 520 t.
Borate of Lime—
Valparaiso, 1,304 25' s.
Castor Oil—
Genoa, 19 cs. Evans, Sons & Co.
Chemicals (otherwise undescribed)
Stockholm, 12 cks. Stott, Coker, & Co.
Philadelphia, 36
Rotterdam, 1 cs.
Baltimore, 50
Colours—
Hamburg, 6 cs. J. T. Fletcher & Co.
Antwerp, 5 cks. 3 brls.
Copper Sulphate—
Baltimore, 1 bx. 50 brls.
Cottonseed Oil—
New York, 200 brls.
N. Orleans, 1,303
Cream of Tartar—
Barcelona, 5 pps.
Tarragona, 8 7 cks.
Dyestuffs—
Argols
Bordeaux, 46 bgs.
Patras, 5 cks. D. Mustakio
Cochineal
Las Palmas, 24 sks. Lazard Freres
Cutch
Rangoon, 1,500 bxs.
Divi Divi
Havre, 769 bgs. Cunard S. S. Co. Ld.
Hamburg, 375
Extracts
Philadelphia, 25 brls.
New York, 30 bxs. W. Bingham
Fiume, 300 Oak Extract Co., Ld.
Baltimore, 120 Miller's P. Express Co.
Antwerp, 20
Halifax, 160 cks. Boutcher, Bacon & Co.
Baltimore, 230
Fustic
Tampico, 20,391 stks. Gruning & Co.
3,903 pcs. D. Midgley & Sons
Baltimore, 5,412 ps.
Corfu, 125 bls.
Indigo
Boston, 45 chits.
Orchella
Lisbon, 190 bgs. 20 bls.

Germany, 20 cks. T. H. Lee
ance, 33 H. Hill & Sons
mbago—
ly, 130 brls. J. Thredder, Sen. & Co.
rmany, 32 cks. T. H. Lee
ash—
rmany, 45 pkgs. L. & I. D. Jt. Co.
ance, 100 c F. W. Berk & Co.
assium Bicarbonate—
lland, 50 c A. & M. Zimmermann
assium Carbonate—
lland, 385 c W. G. Blagden
nce, 340 Thames S. T. & L. Co.
ice Stone—
ly, 6 t. O'Hara & Hoar
ksilver—
in, 25 brls. L. & I. D. Jt. Co.
n—
nce, 25 brls. Lucas & Spencer's
many, 3 H. Lambert
States, 2,265 Moore & Hole
ylates—
land, 15 pkgs. J. Barber & Co.
petre—
many, 10 bgs. L. & I. Dk. Co.
500 C. Wimble & Co.
40 cks. J. Hall & Sons
20 P. Hecker & Co.
57
ang, 47 McGregor, Gow, & Co.
any, 71 c. H. Lambert
ash—
land, 2,000 c. R. Waters
um Acetate—
ice, 23 pkgs. H. Lorenz
um Bichromate—
land, 28 pkgs. C. Tennant, Sons, & Co.
um Silicate—
land, 25 pkgs. Spies Bz. & Co.
ch—
many, 100 pkgs. Philipps & Graves
ce, 40 A. Dunn
lates, 110 L. & I. D. Jt. Co.
and, 2,733 Little & Johnston
sum, 20 Leach & Co.
875 Sawyer, Sons, & Co.
land, 56 E. & T. Pink
90 Philipps & Graves
any, 20 J. Barber & Co.
540 Horne & Co.
ine—
um, 63 bgs. C. S. Lovell
ce, 120 cks. Walbaum & Tosetti
ur—
10 t. R. Waters
10 F. Smith
15 F. C. Devon & Co.
30 Co-op. L. Association
20 Chilworth Gunpowder Co.
13 T. T. Creed
10 Hyslop & Symonds
5 J. T. Morton
10 T. L. Sittler
40 G. Boor & Co.
um, 545 pkgs. Sawyer, Sons, & Co.
440 C. F. Gerhardt
e, 40 A. Zumbek & Co.
ic Acid—
nd, 13 pkgs. B. & F. Wf. Co.
6 F. C. Devon & Co.
ntine—
mah, 9,510 c. H. Funck & Co.
marine—
nd, 28 pkgs. Thames S. T. & L. Co. Ltd.
3 cs. Haefner, Hilpert, & Co.
ny, 3 22 pkgs. Steinhoff, Sons, & Co.
h—
m, 6 pkgs. Wilson & Co.
6 T. H. Lee
tes, 17 Allan Bz. & Co.
ny, 5 L. & I. Dk. Co.
3 Flageollet & Co.
m, 1 Stobbs, Wilson, & Co.
ris—
4 pkgs. B. & F. Wf. Co.

Sumac
Palermo, 100 bgs.
valonia
Constantinople, 169 bls.
Smyrna, 65 1/2 t. Barry Bz.
88 G. Essayan & Co.
104 t 15 c. 952 bgs.
Farina—
Fiume, 250 bgs.
Stettin, 5,450 Brown, Geveke & Co.
Glucose—
New York, 347 brls.
Baltimore, 450
Glue—
Trieste, 50 bgs. Uffmann & Muller
Hamburg, 20
Kotterdam, 200
Infusorial Earth—
Hamburg, 58 bgs.
Iodine—
Valparaiso, 10 brls. A. Gibbs & Son

LIVERPOOL.*Week ending May 23rd.*

Iron Oxide—
Trieste, 5 cks.
Limestone—
Antwerp, 1 cs. J. T. Fletcher & Co.
Linseed Oil—
Montreal, 20 brls. S. Banner & Co.
Manganese Ore—
Bayonne, 500 t. Darwen & Mostyn Iron Co.
Manure—
Hamburg, 482 bgs.
Mineral—
Vera Cruz, 1,882 bgs. Beasler, Waechter & Co.
Mineral White—
Fiume, 100 bgs.
Ochre—
Alicante, 20 brls.
Paint—
Colon, 1 ck.
Paraffin Wax—
Newport News, 111 brls.
Plumbago—
Genoa, 102 bgs.
Potash—
Hamburg, 58 cks.
Kotterdam, 2
Pumice Stone—
Messina, 20 cs. 85 bgs. L. & N. W. Rly. Co.
Leghorn, 10 W. J. Shaw
Rosin—
New York, 750 brls.
Saltpetre—
Hamburg, 4 cks. 50 brls.
Kotterdam, 114
Soap—
N. Orleans, 110 brls.
Leghorn, 500 bxs. Weaver & Sterry Paul Behrends
Naples, 413 cs.
Soapstone—
Bordeaux, 400 bgs. G. G. Blackwell, Sons & Co.
Starch—
New York, 1,515 bgs.
Hamburg, 72 cs.
Antwerp, 272 cs. J. T. Fletcher & Co.
Kotterdam, 340
278
Stearine—
New York, 37 bds.
Antwerp, 26 bgs.
Sulphur—
Catania, 100 t. 521 bgs. 18 cks.
Tallow—
Zarate, 276 pps. J. Nelson & Sons, Ld.
Baltimore, 125 tcs.
Tar and Paint—
Boston, 50 cs. Bahr, Behrend & Ross
Tartar—
Naples, 4 cks.
Bordeaux, 28
Tartaric Acid—
Hamburg, 2 cks.
Treacle—
New York, 300 bgs.

Philadelphia, 1,200
Ultramarine—
Hamburg, 3 cks.
Varnish—
Montreal, 2 brls. W. H. Fellow & Co.
Waste Salt—
Hamburg, 250 bgs.
White Lead—
Kotterdam, 25 cks.
Wood Pulp—
Gothenburg, 5 pkgs. Schenkowald & Co.
170 bls.
103
Wood Spirit—
Hamburg, 5 dms
Zinc Oxide—
Antwerp, 25 brls.
Kotterdam, 100 cks.
Zinc Skimmings—
Philadelphia, 30 brls. 8 cks.

MANCHESTER.
Week ending May 25th.
Alumina—
Hamburg, 1 ck.
Aniline Colours—
Paris, 3 cks. 3 cs.
Hamburg, 69 2
Antimony Bifluoride—
Hamburg, 3 cks.
Antimony Oxalate—
Kotterdam, 4 cks.
Antimony Salt—
Hamburg, 1 ck.
Asbestos—
Kotterdam, 3 cks. 2 cs.
Barium Chloride—
Kotterdam, 10 cks.
Hamburg, 1
Barytes—
Antwerp, 100 bgs.
Bone Ash—
Rio Grande do Sul, 470 t.
Calcium Nitrate—
Hamburg, 1 ck.
Castor Oil—
Antwerp, 10 brls.
Chemicals (otherwise undescribed)
Hamburg, 1 cs.
Colours—
Kotterdam, 16 cks. 24 cs. 2 bxs.
92 brls.
Antwerp, 12
Hamburg, 2
Stettin, 80
Dextrine—
Stettin, 200 bgs.
Dyestuffs—
Aizarine
Kotterdam, 57 crts.
Fustic
Hamburg, 2,742 lbs. 769 bgs.
Indigo
Kotterdam, 1 cht.
Sumac
Palermo, 100 bgs.
Farina—
Hamburg, 110 bgs.
Stettin, 1,550
Gelatine—
Rouen, 10 cs.
Hamburg, 1
Glucose—
Stettin, 1,200 bgs.
Glue—
Rouen, 40 cks. 20 cs. 1 bg.
Kotterdam, 6
Antwerp, 20 bls.
Stettin, 7
Limestone—
Antwerp, 2 crts. 1 cs.
Litharge—
Kotterdam, 3 cks.
Mineral White—
Fiume, 100 bgs.
Pitch—
Hamburg, 59 cks.
Potash—
Hamburg, 50 cks.
Soapstone—
Genoa, 500 bgs. Harrison & Co.
Sodium Hyposulphite—
Hamburg, 12 cks.

Sodium Sulphate —	
Hamburg,	1 ck.
Starch —	
Rotterdam,	50 cs.
Fiume,	100 bgs.
Ghent,	180.
Antwerp,	130.
Hamburg,	10.
Tartar Emetic —	
Hamburg,	2 cks.
Ultramarine —	
Rotterdam,	2 cks.
Waste Salt —	
Hamburg,	qty.
White Lead —	
Rotterdam,	14 cks.
Wood Pulp —	
Rotterdam,	113 bls.
Fiume,	250 pkgs.
Christiania,	679.
Drammen,	650.
Skien,	908.

HULL.

Week ending May 25th.

Acetate of Lime —	
New York,	1,607 bgs. Wilson, Sons, & Co., Ld.
Alum —	
Rotterdam,	31 cks. W. & C. L. Ringrose
Barytes —	
Bremen,	22 cks. H. F. Pudsey
"	27 G. Holmes & Co.
Rotterdam,	74 Hutchinson & Son
Bremen,	66
Antwerp,	145 Bailey & Leatham
Chemicals (otherwise undistributed)	
Hamburg,	12 cks. Wilson, Sons, & Co., Ld.
Rotterdam,	27
Antwerp,	60 pkgs. "
Cod Oil —	
Hamburg,	1 ck. Wilson, Sons, & Co., Ld.
Antwerp,	15 bls. Wilson, Sons, & Co., Ld.
Bergen,	60 "
Colours —	
Rotterdam,	11 cks.
"	4 125 pkgs. W. & C. L. Ringrose
Bremen,	1 H. T. Greaves
Antwerp,	3 Bailey & Leatham
"	12 37 pkgs. Wilson, Sons, & Co., Ld.
Rotterdam,	23 Hutchinson & Son
Cryolite —	
Copenhagen,	4 cks. Wilson, Sons, & Co., Ld.
Dextrine —	
Bremen,	50 bgs. Wilson, Sons, & Co., Ld.
Dyestuffs —	
Alizarine	
Rotterdam,	58 cks. 60 pkgs. W. & C. L. Ringrose
Argols —	
Bordeaux,	50 bgs.
Farina —	
Rotterdam,	450 bgs. Wilson, Sons, & Co., Ld.
Ghent,	358
Hamburg,	50 bgs. "
Hartlingen,	100
Glucose —	
Bremen,	60 bgs. Veltmann & Co.
Rotterdam,	12 cks.
New York,	300 bls.
Rotterdam,	40 pkgs. Hutchinson & Son
Glee —	
Christiansund,	3 cks. Wilson, Sons, & Co., Ld.
Rotterdam,	1 kg. Hutchinson & Son
Hamburg,	20 bgs.
Roos,	20 23 cks. Rawson & Robinson
Kaolin —	
Rotterdam,	20 cks. Reckiet & Sons
Manure —	
Antwerp,	1 kg. Beckie & Howdell
Hamburg,	1,608 bgs. Bailey & Leatham

Mineral White —	
Rotterdam,	5 bgs. Hutchinson & Son
Naphthalene —	
Stettin,	83 cks. Wilson, Sons, & Co., Ld.
Ochre —	
Rotterdam,	50 cks.
Phosphate —	
Ghent,	510 bgs. Wilson, Sons, & Co., Ld.
Pitch —	
New York,	249 bgs. Wilson, Sons, & Co., Ld.
Antwerp,	21 cks. Bailey & Leatham
Potash —	
Dunkirk,	40 dms. Wilson, Sons, & Co., Ld.
Pyrites —	
Huelva,	1,340 t.
Quicksilver —	
Hamburg,	5 bls. Wilson, Sons, & Co., Ld.
Rosin —	
New York,	250 bls. Wilson, Sons, & Co., Ld.
Saltpetre —	
Hamburg,	2 cks.
Soda —	
Rotterdam,	4 pkgs. W. & C. L. Ringrose
Sodium Nitrate —	
Hamburg,	50 bgs. Wilson, Sons, & Co., Ld.
Starch —	
Bremen,	3,463 cs. Veltmann & Co.
Antwerp,	200 Bailey & Leatham
"	40 Wilson, Sons, & Co., Ld.
Stearine —	
Antwerp,	334 pkgs. Wilson, Sons, & Co., Ld.
Tar —	
Drontheim,	1 bri. Wilson, Sons, & Co., Ld.
Hango,	16 cks. J. Good & Sons
Tartaric Acid —	
Rotterdam,	10 cks. 2 bls. Hutchinson & Son
Treacle —	
New York,	250 lrs. Wilson, Sons, & Co., Ld.
Boston,	46 "
Ultramarine —	
Bremen,	18 cks.
Rotterdam,	15 Hutchinson & Son
Yarnish —	
New York,	10 bls. Wilson, Sons, & Co., Ld.
Antwerp,	1
Vermilion —	
Bremen,	2 cs. Veltmann & Co.
Waste Salt —	
Hamburg,	784 bgs. Wilson, Sons, & Co., Ld.
White Lead —	
Antwerp,	46 cks. Bailey & Leatham
Wood Pulp —	
Rotterdam,	40 bls. W. & C. L. Ringrose
Hango,	142 J. Good & Sons
Albo,	27
Zinc Oxide —	
Antwerp,	25 cks. Bailey & Leatham
Zinc White —	
Rotterdam,	5 cks. Hutchinson & Son

GLASGOW.

Week ending May 30th.

Albumen —	
Hamburg,	5 cks.
Alum —	
Rotterdam,	3 cks. J. Rankine & Son
Aniline —	
Rotterdam,	8 cks. 6 cs. J. Rankine & Son
Aniline Colours —	
Hamburg,	4 cs.
Aniline Salts —	
Rotterdam,	14 cks. J. Rankine & Son

Asbestos —	
Quebec,	800 bgs.
Barium Chloride —	
Rotterdam,	4 cks. J. Rankine & Son
Barytes Sulphate —	
Antwerp,	200 bgs. 5 cks.
Barytes —	
Rotterdam,	90 cks. J. Rankine & Son
Boracic Acid —	
Leghorn,	38 cs.
Castor Oil —	
Genoa,	10 cs.
Leghorn,	5 cks.
Antwerp,	58 cks.
Colours —	
Rotterdam,	5 cks. 3 cs. J. Rankine & Son
"	42 pkgs.
Dyestuffs —	
Alizarine	
Rotterdam,	37 cks. J. Rankine & Son
"	24 pkgs.
Cutch —	
Rangoon,	2,890 bxs.
Extracts —	
Baltimore,	100 bls.
Antwerp,	6 cks.
Sumac —	
Palermo,	867 bgs.
Gelatine —	
Hamburg,	2 cs.
Glue —	
Hamburg,	6 cks.
Antwerp,	30 bgs.
Iron Oxide —	
Montreal,	106 pkgs.
Lead Acetate —	
Hamburg,	15 cks.
Naphthol —	
Rotterdam,	1 cs. J. Rankine & Son
Oxalic Acid —	
Rotterdam,	6 cks. J. Rankine & Son
Paint —	
Christiania,	3 cs.
Painters' Colours —	
Antwerp,	5 cks. 4 cs.
Paraffin Scale —	
Rangoon,	484 bxs.
Potash —	
Hamburg,	39 cks.
Pyrites —	
Huelva,	1,850 t. Tharsis Co.
Rosin —	
Baltimore,	1,300 bls.
Starch —	
Rotterdam,	72 cs. J. Rankine & Son
Antwerp,	30
Sulphur Chlorate —	
Rotterdam,	17 cbys. J. Rankine & Son
Treacle —	
Philadelphia,	205 bls. W. Maclay
"	1,000
Montreal,	5 bxs. 1 cs.
Ultramarine —	
Rotterdam,	1 ck. J. Rankine & Son
Waste Salt —	
Hamburg,	qty.
White Lead —	
Rotterdam,	150 cks. J. Rankine & Son
Wood Pulp —	
Montreal,	131 bls.
Christiania,	318
Zinc Oxide —	
Antwerp,	40 cks.

TYNE.

Week ending May 25th.

Alum Earth —	
Hamburg,	90 cks. Tyne S. S. Co.
Barium —	
Rotterdam,	300 bgs. Tyne S. S. Co.
Cod Oil —	
Bergen,	10 bls.

Copper Oxide —	
Hamburg,	1 ck. Tyne S. S. Co.
Farina —	
Hamburg,	40 bgs. Tyne S. S. Co.
Glucose —	
New York,	100 bls. Wm. & Co.
Glue —	
Hamburg,	15 cks. Tyne S. S. Co.
Limestone —	
Antwerp,	4 cks. Tyne S. S. Co.
Ochre —	
Carthagea,	180 bls. Duff
Paint —	
Hamburg,	2 cks. Tyne S. S. Co.
Pyrites —	
Huelva,	2,013 t. Scott
Saltpetre Salts —	
Harberg,	340 t. Clark
Soap —	
Rotterdam,	1 cs. Tyne S. S. Co.
Starch —	
Antwerp,	100 bls. Tyne S. S. Co.
Rotterdam,	179 cs. "
Stearine —	
New York,	25 pkgs. Wm. & Co.
Tartaric Acid —	
Rotterdam,	3 cks. Tyne S. S. Co.
Ultramarine —	
Rotterdam,	1 cs. Tyne S. S. Co.
Yarnish —	
New York,	7 bls. Wm. & Co.
Wood Pulp —	
Copenhagen,	80 bls.
Christiania,	160
Laurvig,	1 pd
Gothenburg,	360
New York,	303 rolls. Wm. & Co.
Zinc Oxide —	
Antwerp,	25 bls. Tyne S. S. Co.

GOOLE.

Week ending May 2nd.

Antimony —	
Boulogne,	1 cks.
Barytes —	
Rotterdam,	11 cks.
Bog Ore —	
Delfsryhl,	57 t.
Caoutchouc —	
Boulogne,	1 cs.
Carbonate of Lime —	
Antwerp,	133 bgs.
Dyestuffs —	
Extracts	
Rouen,	48 cks.
Logwood —	
Hamburg,	1,370 pcs.
Dyestuffs (otherwise undistributed)	
Rotterdam,	175 bgs. 70 cks. 710
Boulogne,	7 28
Phosphate —	
Ghent,	100 bgs.
Potash —	
Rotterdam,	41 cks.
Dunkirk,	30 dms.
Saltpetre —	
Hamburg,	21 cks.
Rotterdam,	83 bgs.
Soda —	
Antwerp,	1 bri.
Waste Salt —	
Hamburg,	1,197 bgs.
Zinc Oxide —	
Antwerp,	25 bl.

GRIMSBY.

Week ending May 25th.

Aniline Oil —	
Hamburg,	21 cks.
Caoutchouc —	
Hamburg,	1 cs.
Chemicals (otherwise undistributed)	
Antwerp,	2 cks.
Hamburg,	10 6 cs.

EXPORTS OF CHEMICAL PRODUCTS

OF

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.			Sheep Dip—			Alexandria,		
<i>ending May 29th.</i>			Cleveland Bay, 105 cs. 200 drs.			Philadelphia,		
11 cs.			Hamburg,			Ammonium Sulphate—		
4 t. 12 c.			Stettin,			Barbadoes,		
Cake—			Melbourne,			Philadelphia,		
43 t.			Sydney,			Honolulu,		
n Carbonate—			Keppel Bay,			Las Palmas,		
15 cs.			Brisbane,			Montreal,		
10 c.			Natal,			Sourabaya,		
18			Soda—			Samarang,		
n Chloride—			Algoa Bay,			St. Petersburg,		
8 c.			Pelotas,			Valencia,		
1 t.			Sodium Acetate—			Amorphous Phosphorus—		
5			Melbourne,			Vera Cruz,		
n Sulphate—			Sydney,			Arsenic—		
26 t.			Sodium Bicarbonate—			Calcutta,		
20			Napier,			Asbestos—		
20 10 c.			Singapore,			Valparaiso,		
n Sulphocyanide—			Mosel Bay,			Vera Cruz,		
1 t. 14 c.			Algoa Bay,			Bleaching Powder—		
Ammonia—			Adelaide,			Alicante,		
27 cydls.			Sodium Sulphate—			Baltimore,		
11 cks.			Ghent,			Boston,		
1 t. 10 c.			Sodium Tartrate—			Chicago,		
2 cs.			Melbourne,			Malaga,		
1 t. 22 pkgs.			Strontium Nitrate—			Montreal,		
oda—			Bombay,			Newport News,		
1 t. 5 c.			Sulphur—			New York,		
10			Madeira,			Philadelphia,		
9			Mauritius, 500 cs.			Venice,		
<i>(otherwise undes.)—</i>			Aden,			Bone Waste—		
3 cs.			Sydney,			Rouen,		
7 c.			E. London,			Boracic Acid—		
10			Algoa Bay,			Montreal,		
6			Sulphuric Acid—			Cape Town,		
7			Colombo,			Borax—		
5			Delagoa Bay,			Havana,		
40 kgs.			Singapore,			Melbourne,		
5 t.			Penang,			Gefle,		
19			Superphosphate of Lime—			Bremen,		
Dried Blood—			Barbadoes,			Antwerp,		
Canaria,			100 t.			Montreal,		
Guano—			Tartaric Acid—			Trieste,		
Barbadoes,			Brisbane,			Galatz,		
Trinidad,			Auckland,			Yokohama,		
Guadeloupe,			Melbourne,			Konisberg,		
Manure—			Sydney,			Stockholm,		
Bundaberg,			Piræus,			Rotterdam,		
Canaria,			St. Petersburg,			Barcelona,		
Madeira,			LIVERPOOL.			Gothenburg,		
Nitric Acid—			<i>Week ending May 29th.</i>			Rio de Janeiro,		
Hong Kong,			Acetic Acid—			Calcium—		
Phosphoric Acid—			Lisbon,			Malta,		
Bundaberg,			10 c.			Calcium Chloride—		
Phosphorus—			Albumen—			Melbourne,		
E. London,			New York,			Carbolic Acid—		
Melbourne,			1 t. 17 c.			Rouen,		
Picric Acid—			Alum—			Yokohama,		
Riga,			Vigo,			Kobe,		
Potassium Bichromate—			Syra,			Constantinople,		
Lisbon,			B. Ayres,			Calcutta,		
Brussels,			Lisbon,			Genoa,		
Potassium Carbonate—			Talcahuano,			Wellington, N.Z.,		
Dunkirk,			Batoum,			Barcelona,		
Potassium Chlorate—			Varna,			New York,		
Rio de Janeiro,			Montreal,			Castor Oil—		
Bombay,			Ibrail,			Pt. Natal,		
Gothenburg,			Alumina Sulphate—			Toronto,		
Lisbon,			Calcutta,			Caustic Potash—		
Potassium Cyanide—			52 t. 1 c.			Chicago,		
Rockhampton,			Aluminous Cake—			Dunedin, N.Z.,		
Singapore,			Calcutta,			Sydney,		
Potassium Iodide—			10 t. 7 c. 3 q.			Caustic Soda—		
Calcutta,			Ammonia (Liquid)—			Alicante,		
Potassium Prussiate—			Antofagasta,			Antwerp,		
Boston,			Valparaiso,			B. Ayres,		
Stockholm,			Ammonium Carbonate—			Cavalla,		
Salt Cake—			Genoa,			Chicago,		
Antwerp,			Montreal,			Galatz,		
Saltpetre—			Naples,			Genoa,		
Brisbane,			Bordeaux,			Hamburg,		
Rotterdam,			Ammonium Chloride—			Huelva,		
Wanganui,			Galatz,			Leghorn,		
Melbourne,			Rouen,			Malaga,		
Sydney,			Genoa,			Malta,		
Rockhampton,			New York,			Mannas,		
Vigo,			St. Petersburg,			Maracaibo,		
Bahia,			Antwerp,			Mazatlan,		
			Patras,			Messina,		
			Barcelona,					
			Trieste,					
			Piræus,					
			Catania,					

Montreal,	210	10	25 lbs.
Motril,	121		
Newport News,	205		
New York,	292		
Odessa,	90		
Oporto,	30		
Para,	5		
Philadelphia,	50		
Pt. Elizabeth,		20 bxs.	
Rio de Janeiro,		5 lbs.	
Riga,	27		
Rotterdam,	288	6 cks.	
Rouen,	15		
St. Petersburg,	200		
Salamanca,	16		
San Francisco,	75		
San Sebastian,		50	
Santos,	50		
Seville,	80		
Sydney,	7	4 pkgs.	
Talcahuano,	25		
Tampico,	200		
Valparaiso,	155		
Vigo,	6		

Chemicals (otherwise undecorated)

Piræus,	3 c.	46
Rotterdam,	1 t.	31
Trieste,	10	17
St. Petersburg,	1	19
New York,	5	5
Constantinople,	2	10
Alexandria,	2	10
Palermo,	2	10
Sundswall,	1	10
Odessa,	2	33
Dunkirk,	1	5
Hamburg,	1	5
Havana,	1	5

China Clay—

New York,	140 bgs.	20 cks
Philadelphia,	512	350

Chloroform—

Vera Cruz,	1 c.	
------------	------	--

Coal Products—**Alizarine Oil**

Messina,	3 cks.	
----------	--------	--

Aniline Salts

Bombay,	2 c.	
Boston,	26	

Anthracene

Rotterdam,	100 bbls.	22 cks.
------------	-----------	---------

Pitch

Galatz,	10 bbls.	
---------	----------	--

Tar

Ambriette,	10 bbls.	
Durban,	20	200 dms.
Lagos,	20	

Tar Salts

New York,	20 cks.	
-----------	---------	--

Coal Tar Products (otherwise undecorated)—

New York,	6 cks.	21 cks.
-----------	--------	---------

Copperas—

Portland, O.,	1 t.	8 c.
B. Ayres,	3	3

Copper Sulphate—

Constantinople,	3 t.	5 c.
Rouen,	35	10
Cette,	337	12
Barcelona,	5	3
Tarragona,	10	1
Odessa,	5	1
Seville,	5	1
Vigo,	5	1
Vera Cruz,	82	5
B. Ayres,	2	8
Montreal,	11	4
M. Video,	4	15
Adelaida,	10	8
Bordeaux,	333	2
Genoa,	94	2
Macmillan,	108	1
Leghorn,	90	12
Vancouver,	403	0

Disinfectants—

Lisbon,	1 t.	12
Bombay,	1 t.	12
Calcutta,	3	5

Dried Blood—

Las Palmas,	4 t.	415
-------------	------	-----

Gelatin—

New York,	75 bxs.	
-----------	---------	--

Glue—

Alexandria,	4 cks.	
-------------	--------	--

Guano—

Guayaquil,	10 t.	470
Motril,	10	88
Valencia,	800	8,000

Oxypum—

New York,	35 t.	5 c.
-----------	-------	------

Lead Acetate—

Calcutta,	2 t.	6 t.
Lisbon,	7	14

Lime—

Avon,	5 t.	7 c.
Little Popo,	2	17
Ambriette,	6 bbls.	

Magnesia—

Barcelona,	4 cks.	
------------	--------	--

Magnesium Sulphate—

Montreal,	25 bbls.	
Portland, Or.,	10	
Rio de Janeiro,	200 kgs.	
Seville,	20	

Manure—

Philadelphia,	9 t.	49
Madeira,	20	150

Nickel Oxide—

Antwerp,	1 c.	45
----------	------	----

Oxalic Acid—

Montreal,	6 c.	411
-----------	------	-----

Paint—

Antofagasta,		5 c.
Barraquilla,		210 kgs.
Bilbao,	24 dms.	
Curacao,	1 c.	50
Gaboon,	8 pkgs.	
La Guayra,	5 dms.	
Landana,	1 c.	
Lisbon,	1 bbl.	
M. Video,	2	13
St. John's, Nfld.,	2	1
San Sebastian,	36	120
Santiago,	7	120
Vera Cruz,	7	

Painters' Colours—

Accra,	30 kgs.	
Barcelona,	20 cks.	
C. C. Castle,	1 c.	72 dms.
Elmina,		20 bbls.
Gaboon,	19	
Galatz,	105	
Iquitos,	10	
Leghorn,	20	
Malta,	160	1
New York,	52	
Para,	7 tcs.	78
Pernambuco,	30	12
Philadelphia,	10	
Ponce,	2	
San Juan,	3	100
Santos,	10	
Talcahuano,	2	
Toronto,	20	
Vera Cruz,	2	

Phosphorus—

Vera Cruz,	8 c.	2 q.
Guadalajara,	5	55
Philadelphia,	2	39
Hioaga,	6 t.	1,553

Potassium Bichromate—

Constantinople,	4 t.	17 c.
-----------------	------	-------

Potassium Carbonate—

Chicago,	13 c.	493
----------	-------	-----

Potassium Chlorate—

Ancona,	5 t.	6 c.
Riga,	5	10
Philadelphia,	5	10
Odessa,	1	2
Naples,	1	2
Gothenburg,	1	2
Bari,	1	2
Guadalajara,	16	26
Vera Cruz,	39	10
Hioaga,	28	10
Gutierrez,	5	10
Stockholm,	2	10
Moscow,	2	10
Shanghai,	2	10
Rotterdam,	4	2
Montreal,	2	2
St. Petersburg,	43	1
Genoa,	25	5

Potassium Permanganate—

Montreal,	2 c.	46
-----------	------	----

Potassium Prussiate—

Boston,	2 t.	3 c.
Oporto,	2	2 q.

Pumice Stone—

Rosario,	3 cks.	
----------	--------	--

Salt—

Accra,	6 t.	
Adjua,	5	
Amsterdam,	70	
Antwerp,	100	
Batanga,	7	
Cabenda,	18	14 c.
Gd. Bassa,	7	10
Gd. Bassam,	6	
Halifax,	300	
Landana,	28	11
Rio de Janeiro,	1	
Rotterdam,	100	
Trinidad,	17	16
Valparaiso,	4	11

Salt Cake—

Philadelphia,	300 t.	4150
Wellington, N. Z.,	1 c.	7
Newport News,	73	68
Lisbon,	10	15
San Francisco,	49	6
Baltimore,	50	11

Saltpetre—

Montreal,	1 t.	16 c.
San Francisco,	4	7
Sydney,	1	17
New York,	1 c.	11
Pernambuco,	5	1

Sheep Dip—

N. Orleans,	10 t.	18 c.
M. Video,	5	17
B. Ayres,	20	10

Soap—

Adelaide,	100 bxs.	
Algoa Bay,	10 cks.	
Antwerp,	1,300	
Barbadoes,	350	1 c.
Boston,	41	
Cette,	100	
Colon,	100	
Dominica,	43	
E. London,	150	
Ghent,	60	
Gibraltar,	61	
Halifax,	200	
Honolulu,	200	
Iquique,	65	
Iquitos,	50	25 bbls.
Landana,	170	
Montreal,	3	
Old Calabar,		5 dms.
Palermo,	1	
Parahyba,	350	
Pt. Elizabeth,	50	
St. John's, Nfld.,	25	
Tangiers,	15	
Trinidad,	500	

Soda Alkali—

Boston,	40 bbls.	
Genoa,	210	
Ibrail,	15	
Leghorn,	75	
Lisbon,	62	
Odessa,	110	
Toronto,	70	

Soda Ash—

Baltimore,	1,015 bgs.	
Barcelona,	20 cks.	
Boston,	37 pkgs.	
B. Ayres,	450 bbls.	
Calcutta,	124 kgs.	
Cavalla,	25	
Ghent,	170	
Hamburg,	200	197
Johannesburg,		43 kgs.
Leghorn,	25	
Montreal,	80	20 tcs.
Naples,	300	
New York,	687	
Philadelphia,	2,160	33
Santos,	42	173
Yokohama,	100	

Soda Crystals—

Boston,	420 bbls.	
Coronel,	50 bgs.	
Malta,	60	
Montreal,	300 kgs.	
N. Orleans,	167	50
New York,	50	
Oporto,	12 cks.	
Philadelphia,	280	10

Sodium Bicarbonate—

Bilbao,	8 cks.	
Bordeaux,	4 kgs.	8 bbls.
Cartagena, Sp.,	25	
Christiania,	20	
Copenhagen,	20	
Danzig,	40	6
Galatz,	20	
Havana,	25	
Konigsberg,	975	
Montreal,	65	16
Odessa,	170	15 bbls.
Philadelphia,	100	
Riga,	630	
Rouen,		67 pkgs.
San Sebastian,	10	
Seville,	220	15
Stettin,	10	10 bgs.

Sodium Chlorate—

Antwerp,	100 kgs.	
New York,	60	
Rotterdam,	14	
St. Petersburg,	125	

Starch—

Pt. Natal,	100 cks.	
------------	----------	--

Sulphur—

Havana,	15 c.	2 q.
---------	-------	------

Toronto,	2 t.	11
Boston,	200	5

Sulphuric Acid—

M. Video,	1 t.	10 c.
-----------	------	-------

Superphosphate—

Las Palmas,	10 t.	
-------------	-------	--

Tin Crystals—

Barbadoes,	3 c.	
------------	------	--

Treacle—

Amsterdam,	3 bbls.	
Antwerp,	40 cks.	18 1/2
Christiania,	50	
Gothenburg,	20	
Hamburg,	10	
Norrkoping,	200	
Rotterdam,	10	25
Stockholm,	25	
Terneuzen,	40	

Yarnish—

Montreal,	1 c.	
-----------	------	--

Whiting—

Pernambuco,	20 cks.	
Valparaiso,	110 bgs.	

Zinc Chloride—

Bombay,	4 t.	10 c.
---------	------	-------

MANCHESTER

Period ending May 25th.

Aniline Colours—

Rotterdam,	2 cks.	
------------	--------	--

Aniline Oil—

Treport,	5 dms.	
----------	--------	--

Anthracene—

Rotterdam,	406 cks.	
------------	----------	--

Benzol—

Rotterdam,	29 dms.	
------------	---------	--

Chemicals (otherwise undecorated)

Rotterdam,	1 c.	
------------	------	--

China Clay—

Bombay,	20 cks.	
---------	---------	--

16	10	5 kgs.
1	6	
20		
1	55	5 pkgs.
10		121 bgs.
4		
27	3	
100		
1		
10		
11		
75	34 dms.	
Oil—		
630 c.		
410		
69		
35		
177		
1,678		
102		
201		
340		
2,245		
84		
190		
Oil—		
5 cks.		
(otherwise undescribed)		
1 ck.		
1 ck.		
1		
2 bgs.		
5 bls.		
5		
10		
71 cks.		
Oil—		
80 c.		
204		
35		
690		
97		
63		
321		
435		
42		
210		
153		
692		
White—		
280 bls.		
am,		
100 bgs.		
5 cks.		
Colours—		
27 cks.		
236 cks.		
5 cs.		
28 dms.		
15 pks.		
48		
3		
2		
56		
40		
1		
35 pks.		
2 cs.		
1		
23		
18		
6		
126		
2		
144		
95		
150		
16		
50		
2		
17		
White—		
102 cks.		
ate—		
503 bgs.		
450 t.		
5 cks.		
305 t.		
50		
550 cs.		
40 tcs.		
5 cks.		
10		
5		

Danzig,	7
Gothenburg,	200
Rotterdam,	10
Stettin,	7 cs.
Stavanger,	6
Toluidine—	
New York,	10 dms.
Treacle—	
Bergen,	50 cks.
Varnish—	
Antwerp,	8 cks. 4 cs.
Amsterdam,	5
Bergen,	2
Bordeaux,	
Copenhagen,	4
Drontheim,	5
Ghent,	1
Hamburg,	4
Naples,	4
Rotterdam,	1

GLASGOW.

Week ending May 30th.

Acid—	
Bombay,	£38
Ammonium Sulphate—	
U.S.A.,	10 t.
Aniline Colours—	
U.S.A.,	£34
Bleaching Powder—	
Calcutta,	£1,310
Boracic Acid—	
Havre,	£233
Carbolic Acid—	
Christiania,	4 cks. 5 bls.
Rotterdam,	5 t.
Castor Oil—	
Santos,	6 t. 6 c.
Caustic Soda—	
U.S.A.,	£210
Coal Products—	
Creosote Oil	
Christiania,	20 bls.
Pitch	
Amsterdam,	167 t.
Canada,	
Montreal,	
U.S.A.,	
Konigsberg,	
Tar	
Christiania,	4 bls.
Rotterdam,	28 t.
Montreal,	
Konigsberg,	585
Tar Oil	
Konigsberg,	250 bls.
Dyestuffs—	
Extracts	
Cornwall,	£291
Hamilton,	30
Magog,	33
Logwood	
U.S.A.,	£35
Farina—	
U.S.A.,	3 t. 10 c.
Rio de Janeiro,	2 3½
Gelatine—	
U.S.A.,	5,400 lbs
Glue—	
Alexandria,	£27
Iodine—	
Rotterdam,	£350
Lead Acetate—	
Calcutta,	£60
Linseed Oil—	
Cape Town,	1 t. 17½ c.
Hiogo,	4 8¼
Santos,	2 8
Canada,	6 2
Litharge—	
Montreal,	£35
Magnesium Sulphate—	
Christiania,	10 t.
Rio de Janeiro,	£37
Paint—	
Bombay,	£53
Singapore,	102
Callao,	65
Painters' Colours—	
Bombay,	£51
Rotterdam,	5 c.
Rotterdam,	20
Calcutta,	192
Paraffin Wax—	
Hiogo,	£110
Antwerp,	21
Piræus,	14
Rio de Janeiro,	27

Potassium Bichromate—	
Rheims,	£198
Rouen,	711
Hiogo,	177
Yokohama,	146
Amsterdam,	200
Antwerp,	193
Ghent,	136
U.S.A.,	1,377
Konigsberg,	120
Potassium Prussiate—	
Lyons,	£343
Yokohama,	43
Soap—	
Bombay,	3 t. 14¼ c.
Sodium Bichromate—	
France,	£350
Lyons,	167
Paris,	167
Roanne,	165
Rouen,	114
Troyes,	164
Ghent,	269
U.S.A.,	512
Sodium Phosphate—	
U.S.A.,	£57
Starch—	
Rio de Janeiro,	£27
Stearine—	
U.S.A.,	17 t. 2 c.
Sulphuric Acid—	
Natal,	£30
Bombay,	2,825
Tallow—	
Alexandria,	1 t. 6¼ c.
Rotterdam,	19
Treacle—	
Christiania,	16 t. 15 c.
Turpentine—	
Cape Town,	£25
White Lead—	
Rotterdam,	£3

TYNE.

Week ending May 25th.

Alum—	
Oporto,	8 t. 3 c.
Copenhagen,	10 16
Alum Earth—	
Antwerp,	9 t. 13 c.
Ammonia—	
Pomaron,	9 c.
Ammonium Carbonate—	
Barcelona,	1 t.
Ammonium Chloride—	
Barcelona,	2 t. 10 c.
Ammonium Sulphate—	
Valencia,	86 t. 10 c.
Antimony—	
New York,	45 t.
Hamburg,	4
Copenhagen,	1
Rotterdam,	1
Arsenic—	
Genoa,	1 t. 2 c.
Barytes—	
New York,	100 t.
Hamburg,	104
Blanc Fixe—	
Valencia,	7 t. 5 c.
Bleaching Powder—	
St. Petersburg,	183 t. 4 c.
New York,	115 1
Oporto,	8 12
Reval,	5 1
Antwerp,	45 1
Copenhagen,	42 18
Christiania,	21 18
Genoa,	9 19
Rotterdam,	64 15
Bergen,	7
Drontheim,	11 17
Gothenburg,	2 17
Hamburg,	65 1
Caustic Soda—	
Hamburg,	103 t. 5 c.
New York,	134 6
Antwerp,	42 9
Copenhagen,	2 18
Christiania,	2 18
Barcelona,	53 1
Bari,	4 18
Genja,	76 18
Chemicals (otherwise undescribed)	
Pomaron,	1 c.
Colours—	
Antwerp,	4 lbs.
Genoa,	1 t. 3 c.

Fluorspar—	
New York,	8 t. 1 c.
Hydrochloric Acid—	
Pomaron,	13 c.
Litharge—	
Antwerp,	9 t. 19 c.
Copenhagen,	17
Rotterdam,	5
Magnesia—	
New York,	1 t. 15 c.
Antwerp,	2
Genoa,	2
Barcelona,	8 10
Manganese—	
Civita Vecchia,	20 t.
Manure—	
Valencia,	145 t.
Nitric Acid—	
Pomaron,	1 c.
Paint—	
New York,	19 t. 10 c.
Flensburg,	1 9
Antwerp,	2
Valencia,	12
Rotterdam,	1
Silicate—	
Valencia,	10 t. 4 c.
Soda—	
New York,	185 t. 18 c.
Oporto,	6 10
Hamburg,	14
Christiania,	10 1
Rotterdam,	9 17
Drontheim,	5 3
Bari,	1 19
Genoa,	26 16

Soda Ash—	
Bergen,	5 t.
Sodium Sulphate—	
Ghent,	320 t.
Norroping,	1,000
Sulphur—	
Christiania,	50 t.
Sulphuric Acid—	
Pomaron,	3 q.
Superphosphate—	
Valencia,	257 t. 8 c.
Tar—	
Antwerp,	3 q.
Varnish—	
Antwerp,	1 q.
White Lead—	
New York,	35 t. 14 c.
Oporto,	15
Antwerp,	7
Copenhagen,	16
Christiania,	2 3

GOOLE.

Week ending May 22nd.

Benzol—	
Hamburg,	47 cks.
Rotterdam,	58
Caoutchouc—	
Boulogne,	3 cks.
Chemicals (otherwise undes.)—	
Boulogne,	8 cs.
Ghent,	20 pkgs.
Rouen,	4 cks.
Coal Products (otherwise undes.)—	
Antwerp,	3 cks.
Boulogne,	42 5 tins.
Ghent,	8
Hamburg,	18
Rotterdam,	601 2 cs.
Dyestuffs (otherwise undescribed)	
Hamburg,	8 cks. 62 bgs.
Pitch—	
Antwerp,	263 t.
Dunkirk,	8 t.

GRIMSBY.

Week ending May 25th.

Chemicals (otherwise undescribed)	
Carthagea,	3 cs.
Dieppe,	7 cks.
Hamburg,	11 3
Coal Products (otherwise undes.)—	
Carthagea,	1 pkge.
Dieppe,	178 cs. 2 cs.

PRICES CURRENT.

WEDNESDAY, JUNE 5TH, 1913

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.B. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

Acids:—

	£	s.	d.
Acetic, 25% and 40%	per cwt.	6/3	& 9/3
Glacial	"	40/-	
Arsenic S.G., 2000°	"	0	15 0
Fluoric	per lb.	0	0 3 3/4
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0 10
(Cylinder), 30° Tw.	"	0	3 0
Nitric 80° Tw.	per lb.	0	0 1 3/4
Nitrous	"	0	0 1 3/4
Oxalic	nett	0	0 3 3/4
Phosphoric, 1750°	"	0	1 1
Picric	"	0	0 10
Sulphuric (fuming 50%)	per ton	15	10 0
(monohydrate)	"	5	10 0
(Pyrites, 168°)	"	3	0 0
(free from arsenic, 145°)	"	1	5 0
Sulphurous (solution) S.G. 1025	"	3	0 0
Tannic (pure)	per lb.	0	1 0
Tartaric	"	0	0 10 3/4
Arsenic, white powdered	nett	per ton	14 17 6
Alum (loose lump)	"	4	12 6
Alumina Sulphate (pure)	"	4	12 6
Aluminoferrous	"	2	7 6
Aluminium	per lb.	0	2 10
Ammonia, Anhydrous	"	0	1 3
" 880=28° B.	per lb.	0	0 3
" =24° B.	"	0	0 2 3/4
" Carbonate	nett	"	0 0 3 3/4
" Muriate	per ton	21	10 0
" (sal-ammoniac) 1st & 2nd	per cwt.	39/-	& 37/-
" Nitrate	per ton	40	0 0
" Phosphate	per lb.	0	0 8 1/2
" Sulphate (grey) London	per ton	10	0 0
(grey) Hull	"	10	0 0
Aniline Oil (pure)	per lb.	0	0 5 1/4
Aniline Salt	"	0	0 4 3/4
Antimony	per ton	32	0 0
(tartar emetic)	per lb.	0	0 7
(golden sulphide)	"	0	0 10
Barium Chloride	per ton	6	7 0
" Carbonate (native)	"	3	5 0
" Sulphate (native levigated)	"	45/-	to 75/-
Bleaching Powder, 35%	nett	"	7 0 0
Liquor, 7%	"	3	10 0
Bisulphide of Carbon	"	13	0 0
Chromium Acetate (crystal)	per lb.	0	0 6
Calcium Chloride	per ton	2	2 6
China Clay (at Runcorn) in bulk	"	15/-	to 30/-

Coal Tar Products and Dyes:—

Alizarine (artificial) 20 %	.. .. .	nett	per lb.	0 0 8
Magenta	.. .. .	.. .. .	"	0 3 9
Anthracene, 30 % A, f.o.b. London	.. .. .	per unit	per cwt.	0 1 0
Benzoil, 90 % nominal	.. .. .	.. .. .	per gallon	0 1 0½
50/90	.. .. .	.. .. .	"	0 0 11
Carbolic Acid (crystallised 40")	.. .. .	.. .. .	per lb.	0 0 6½
" (crude 60")	.. .. .	.. .. .	per gallon	0 1 8
Cresote (ordinary)	.. .. .	.. .. .	"	0 0 1¾
(filtered for Lucigen light)	.. .. .	.. .. .	"	0 0 2
Crude Naphtha 30 % @ 120° C.	.. .. .	.. .. .	"	0 0 5½
Grease Oils, 22" Tw.	.. .. .	.. .. .	per ton	2 10 0
Pitch, f.o.b. Liverpool or Garston	.. .. .	.. .. .	"	1 13 0
Solvent Naphtha, 90 % at 160°	.. .. .	.. .. .	per gallon	0 1 1
Lucigen and "Wells Oils	.. .. .	.. .. .	"	0 0 2½
Copper	.. .. .	.. .. .	per ton	43 11 3
" Sulphate	.. .. .	.. .. .	"	15 15 0
" Oxide (copper scales)	.. .. .	.. .. .	"	41 10 0
Glycerine (crude)	.. .. .	.. .. .	"	16 10 0
(distilled S.G. 1250")	.. .. .	.. .. .	"	42 10 0
Iodine	.. .. .	.. .. .	nett, per oz.	0 0 9
Iron Sulphate (copperas)	.. .. .	.. .. .	per ton	1 5 0
" Sulphide (antimony slag)	.. .. .	.. .. .	"	2 0 0
Lead (sheet) for cash	.. .. .	.. .. .	"	11 12 6
" Litharge Flake (ex ship)	.. .. .	.. .. .	"	13 5 0
" Acetate (white )	.. .. .	.. .. .	"	24 10 0
" brown )	.. .. .	.. .. .	"	14 10 0
" Carbonate (white lead) pure	.. .. .	.. .. .	"	16 0 0
Nitrate	.. .. .	.. .. .	"	18 15 0

Lime, Acetate (brown)	per ton	4	5
(grey)	"	8	10
Magnesium (ribbon and wire)	per oz.	0	2
" Chloride (ex ship)	per ton	1	7
" Carbonate	per cwt.	1	17
" Hydrate	per ton	17	0
" Sulphate (Epsom Salts)	per ton	3	0
Manganese, Sulphate	"	17	0
" Borate	per cwt.	2	15
" Ore, 70%	per ton	4	5
Methylated Spirit, 61° O.P.	per gallon	0	1
Naphtha (Wood), Solvent	"	0	3
" Miscible, 60° O.P.	"	0	3
Oils:—			
Cotton-seed	per ton	18	10
Linseed	"	22	5
Petroleum, American	per gallon	0	6
Stearine	per ton	25	10
Phosphorus (yellow)	per lb.	0	2
(red)	"	0	2
Potassium (metal)	per oz.	0	3
" Bichromate	nett	per lb.	0 4
" Carbonate, 90% (ex ship)	"	per ton	16 15
" Chlorate	"	per lb.	0 8
" Cyanide, 98%	"	"	0 1
" Hydrate (Caustic Potash) 80/85%	per ton	21	5
" (Caustic Potash) 75/80%	"	19	15
" (Caustic Potash) 70/75%	"	19	10
" Nitrate (refined)	per cwt.	1	1
" Permanganate	per cwt.	2	17
" Prussiate Yellow	per lb.	0	0
" Sulphate, 90% (ex ship)	per ton	9	15
" Muriate, 80% (do.)	"	8	10
Silver (metal)	per oz.	0	2
" Nitrate	"	0	2
Sodium (metal)	per lb.	0	2
" Carb. (refined Soda-ash) 48%	nett	per ton	4 15
" (Caustic Soda-ash) 48%	"	3	17
" (Carb. Soda-ash) 48%	"	3	15
" (Alkali) 58%	"	5	2
" (Soda Crystals)	"	2	2
" Acetate (ex-ship)	"	14	0
" Arseniate, 45%	"	11	0
" Chlorate	per lb.	0	0
" Borate (Borax)	net, per ton	18	0
" Bichromate	per lb.	0	0
" Hydrate (77% Caustic Soda) (f.o.b.) net pr. ton	"	9	7
" (74% Caustic Soda)	"	9	7
" (70% Caustic Soda)	"	7	10
" (60% Caustic Soda)	"	6	10
" (60% Caustic Soda, cream) (f.o.b.)	"	6	7
" Bicarbonate	"	6	10
" Hyposulphite	"	5	10
" Manganate, 30%	"	16	0
" Nitrate (95%) ex-ship Liverpool	per cwt.	11	8
" Nitrite, 98%	per ton	29	0
" Phosphate	"	14	10
" Silicate (glass)	per ton	4	10
" (liquid, 100° Tw.)	"	3	11
" Stannate, 40%	per cwt.	3	2
" Sulphate (Salt-cake)	per ton	0	17
" (Glauber's Salts)	"	1	5
" Sulphide	"	8	0
" Sulphite	"	5	5
Strontium Hydrate, 100%	"	5	10
Sulphocyanide Ammonium, 95%	per lb.	0	0
" Barium, 95%	"	0	0
" Potassium	"	0	0
Sulphur (Flowers)	per ton	3	15
" (Roll Brimstone)	"	5	0
" Brimstone: Best Quality	"	3	12
Superphosphate of Lime (26%)	"	2	7
Tallow	"	23	10
Tin Crystals	per lb.	0	0
" English Ingots	per ton	69	0
Zinc (Spelter)	"	15	0
" Chloride (solution, 100° Tw.)	"	5	7

THE CHEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

421.

SATURDAY, JUNE 15, 1895.

Vol. XVI.

Contents.

PAGE	PAGE
Topics	Report on Manure Material..... 387
Intelligence	Miscellaneous Chemical Market .. 387
Sal Liquor in the States.. 383	Liverpool Oil and Colour Market.. 387
Sal Notes	The Metal Market
Sal Phenomena of the	Liverpool Mineral Market
here..... 385	Tyne Chemical Report..... 387
of the Sales of Chilean	Hull Paint, Oil, and Colour Report 388
Fields	West of Scotland Chemicals
dence	New Companies..... 388
Esparto via The Canal .. 386	The Patent List..... 388
of Smoke Preventing	Gazette Notices..... 389
ces	Imports
es..... 386	Exports
monia Products	Prices Current..... 396

TENDER.

SURPLUS TAR.

Gas Committee of the Corporation of Coventry prepared to receive TENDERS for the purchase of the Surplus TAR at their Works, Coventry, for one year, from July 1st next, about 2,000 tons per annum, stating price per ton delivered into boat, to be addressed to the Manager, and marked "Tender for Tar." Committee do not bind themselves to accept the highest or any Tender.
GEORGE WINSTANLEY, Assoc. M. Inst. C. E.,
Manager.
Coventry,
June 7th, 1895.

ADVERTISEMENTS.

WORKS MANAGER.—Wanted an under Manager, who thoroughly understands caustic soda and soda ash and vitriol making, Works in Lancashire. Must have a good technical knowledge of chemistry, and be conversant with German.—Address, "SODA," *Chemical Trade Journal* Office, or.

ENGINE WANTED; capacity about 4,000 c feet per hour.—Address, "B 232," *Chemical Trade Journal* Office, or.

CHLORATE OF POTASH.—Wanted a Chemist, thoroughly competent to undertake this manufacture, and able to supervise in of plant for same.—Apply confidentially, giving full particulars of experience, and salary required, to "CHLORATE," *Chemical Trade Journal* Manchester.

Notices.

Communications for the *Chemical Trade Journal* should be addressed to the Editor, and Cheques and Post Office Orders made payable to—

VIS BROS., 32, Blackfriars Street, MANCHESTER.

Our Registered Telegraphic Address is—
"Expert, Manchester."

Advertisements.

Advertisements of Situations Vacant, Premises on Sale or To be Let, and various Wants, and Specific Articles for Sale by Private Contract are published in the *Chemical Trade Journal* at the following rates:—

10 Word and under..... 2s. 6d. per insertion
Each additional 10 words

Advertisements, Announcements in the Directory Columns, and all Advertisements not prepaid, are charged at the Tariff rates, which will be forwarded on request.

CURRENT TOPICS.

THE UNWISDOM OF THE WOULD-BE WISE.

ANYBODY is entitled to hold his own opinion, and there are two sides to every question. Granting this, it not unnaturally follows that some of the opinions held are unsound. This matters not so long as the opinions are simply "held," but only too often the holders proceed to expound the same, in the fond hope that by so doing they will shed untold enlightenment upon their less fortunate brethren. When they do so, however, they must not be surprised if now and then they are met with rather pointed arguments from those who take different views.

A well-known organ of the building trade has been descending upon the barbaric methods of sanitation adopted in Manchester, which is dubbed a city of "wealth and vile sanitation," tolerating conveniences of the most primitive kind, reeking with soil carts, while "it knows not the very rudimentary rules of sanitary science." This is a heavy indictment, and we shall take upon ourselves for the nonce to voice the argument of the "other side." Presumably all these apparently startling charges arise from a superficial consideration of the so-called pail system. We have plenty of the water carriage systems with subsequent chemical treatment, and the state of the Ship Canal is the best testimony as to the sanitary efficiency of this method that can well be found. Criticism like that of our contemporary is best met by a comparison of the methods adopted by the self-constituted Savonarola of to-day. The critic, in describing reeking soil carts, evidently is not aware that the pails are cleansed externally and disinfected, in addition to being closed by a pneumatic cushion, far more securely than the sewers by which the sewage of the Metropolis is conveyed to Barking Creek. But let us compare the methods of treating domestic refuse. In London and the suburbs an observant eye can see from any of the principal railway routes myriads of gaping dust-bins, choked to overflowing with reeking domestic refuse of all kinds. These so-called "dust" bins are moreover not unfrequently converted by the aid of the vivid imagination of childhood into many and varied objects, which form the basis of childish amusements, thus becoming a daily frequented locale. The collection of weeks has eventually to be removed, and how is this accomplished? By the sole aid of those obnoxious abominations which infest London and the suburbs in the shape of the familiar, uncovered and often noisome dust-cart, dragging at its tail sacks of putrifying bones and malodorous rags. These unsightly and insanitary conveyances ply at all hours of the day, accompanied by discordant cries of "Dust, O!" in streets constantly traversed by pedestrians of all ages.

How does all this compare with the silent and unobtrusive method of Manchester, with constant, and in certain quarters daily, collections, carried on in the quiet of the night or early

morn by means of covered carts, well-nigh dust tight, the contents of which are in a few hours burnt to a harmless but useful clinker, instead of being collected on a gigantic "tip" and hand-sorted after much delay.

In the light of this comparison it would appear that the "rudimentary rules of sanitary science," as well as those of correct observation and inference might be studied with profit, and applied nearer home, before our London sage indulges further in rampant declamations against the sanitary barbarism of Cottonopolis.

GOLD PRODUCTION IN THE RAND.

During the past few months each monthly return of the total production of gold in the Rand district has established a record, and the return for May has not proved an exception.

An advance of over 8,000 ounces has to be recorded, thus bringing the total to 194,580 ounces for the month—the largest ever known.

In view of the improvements in methods of recovery, to which there seems no end, and some of which are moreover shaping well, the time when the monthly production will total 200,000 ounces may feasibly be considered within easily-measurable distance. To judge by the past, something phenomenal may be expected in the way of rejoicing when this figure is reached.

Among the chief producers the following are the four which stand first, arranged in the order of production:—The Robinson Mine, Langlaate Estate, New Primrose, and Crown Reef; the first of the four having in December last reached the substantial monthly output of over 16,500 ounces.

After looking at the returns for the past four years in conjunction with the present rate of progress we shall be surprised if, all things being equal, the total for 1895 does not reach, and probably exceed, two-and-a-quarter million ounces.

THE LAGUNAS SYNDICATE.

According to the statements made by Colonel North at the statutory meeting of this recently-reconstructed company, things appear to be going better than with the unfortunate *San Patricio*. Rumours have been rife, but they appear to have been rumours pure and simple. Of the two *officinas* the Northern one has been at work since March, and is producing at the rate of 60,000 quintals per month. The Southern *officina* will, it is confidently expected, be at work by October. When both are at work the output is estimated at 300,000 quintals a month.

In the face of this increased production it is not surprising that Colonel North should express his opinion that they were on the verge of the re-construction of the Combine. With the means for cheap production, and no difficulty about water at either *officina*, while in addition the machinery for the Southern *officina* is on the ground, and the wherewithal to pay for it in hand, it would certainly be difficult to show that things, for the present at all events, are not promising.

GUTTA-PERCHA FROM LEAVES.—There is now a prospect that the supply of gutta-percha will become permanent. The old native method of cutting down a tree to get the gum, and thus killing the goose that laid the golden eggs, is giving place to that of plucking the leaves and extracting the gum from them. This plan has been put in practice by M. Hourant, at Sarawak, with success. The gum from the leaves is not only purer, but there is more of it. An adult tree of twenty-five to thirty years' growth only yields one catty of gum when the tree is sacrificed, whereas two pluckings of the leaf yield as much without injuring the tree. Moreover, the saplings from the roots of trees already cut down are useful in yielding leaves.

Legal Intelligence.

HIGH COURT OF JUSTICE. CHANCERY DIVISION.

(Before Mr. Justice Romer.)

THE KELLNER-PARTINGTON PAPER PULP COMPANY & THE
HARTLEPOOLS PULP AND PAPER COMPANY, LTD.

This case arose from a dispute about a process for removing resinous specks from sulphite pulp by the use of petroleum. Expert evidence was called on both sides, the case occupying the four days.

The defendants denied the validity of the patent upon several grounds, 1st, its use by the plaintiffs themselves, by the defendants, and by Hull Chemical Wood-Pulp Company, Ltd., prior to the date of application for letters patent; 2nd, that the alleged invention was anticipated by several prior inventions for which letters patent have been granted; 3rd, that the process was not novel or subject matter for a patent. Judgment was entered for the defendants, the plaintiff's patent found faulty.

In delivering judgment, Mr. Justice Romer said: "The one objection so clearly fatal to this patent that I need not consider the other points that arise. I refer to the user proved to me beyond dispute by the plaintiff, and by the Hull Company, the date of the plaintiff's patent. It cannot be disputed. It is a very substantial user of paraffin or petroleum, substantially in the quantities as are covered by this patent, used in the same manner and in the same part of the process of manufacture. In other words, it was a very substantial user of the very process claimed by, and is the subject of, this patent, not for experiment, but in the course of business. Now it is true that that user was not for the purpose of obtaining the precise advantages claimed by this patent, and to be obtained by the invention of the subject of this patent. It was a user for the purpose of obtaining distinct and analogous advantages. It was a beneficial user to obtain those analogous advantages. The advantages were these, that the user enabled the pulp to be got through the slits of the grids, it better cleaned the slits, enabled the slits to be used, and saved labour. So that this process, the process covered by this patent, was in substantial use before the date of this patent for a very, very beneficial purpose indeed. That being so, I ask myself this question: What was the plaintiff's real discovery? He seeks to patent by the patent before me? It really was this only. He found that if you thoroughly cleaned the machinery before the process which I have been describing as having been before was in process of being used, that then the residue did not collect on the machinery as it did before, and the specks did not appear in the pulp as they did before, and so a considerable advantage was obtained by the process. Now that is the discovery, and nothing else."

The conditions were that the machinery and plant should be perfectly clean to start with. That was the discovery, and the only discovery, as I have already pointed out, as is as clear to my mind as the shadow of a question from the plaintiff's evidence himself as to the rest of the evidence before me.

Then the question arises, Is such a discovery as that the subject for letters patent? In my opinion it is not. I think cannot patent such a discovery as this, namely, a discovery that a process in use before the patent, and which anyone, therefore, is entitled to use, will have an extra benefit attached to it if the machinery in the process is thoroughly cleaned. It may be a very important recommendation. It may lead to very important benefits, but it is not a recommendation or a discovery that, in my opinion, forms a proper subject of letters patent. Test it in this way. Take the Hull Company's working, for example. How could I stop the Hull Company from continuing to use paraffin in the way they have used it since the date of these letters patent? In my opinion I could not. I could restrain them from thoroughly cleaning their machinery while they were using the paraffin in the way they used it before? Could I then that, though they may continue their prior user, they stop their prior user if ever they venture to thoroughly clean their machinery? Clearly I could not. The Court would have no power to impose such a condition upon them; and yet if I did not impose such a condition upon them they must of necessity be using the paraffin as they used it before, and obtain the whole benefits which form the subject matter of the plaintiff's invention.

For these reasons, it appears to me, as I have said with regard to the user I have mentioned, coupled with the consideration of the real invention is as deposed to by the plaintiff himself, that this clearly fails and the action with it, and the action must, in my opinion, be dismissed with costs.

AMMONIACAL LIQUOR IN THE STATES.

At a recent meeting of the Western Gas Association held at Pittsburgh, U.S.A., the following paper was read by Mr. J. Osius on the subject of gas liquor, and is instructive in showing the position of gas companies in this connection. In the course of his paper the author said:

Ammonia, as a by-product, has become a familiar factor with gas works, whether large or small, more during recent years than at the time when the first gas works were constructed, producing a poor but high-priced

gas. In these days of progress can afford to stand in the competition without the most economical, as well as the most complete, equipment for the production of the "light of the people" in its various stages. It is no longer a question, how small a plant need to make the gas or how cheaply you can erect your plant, but can you get the most perfect apparatus to make the best gas at the least cost?

We are well aware that the success of a business depends upon its management, and that for matters which may at first appear to us to be of little importance, in the course of time, grow to importance and become worthy of attention.

More than ten or fifteen years ago, by-products of gas works were considered as waste products, being unavoidable burdens to the gas company and a nuisance to the inhabitants of cities blessed with a gas works. Year after year, however, conditions have compelled the producer of gas to study its by-products more carefully, and in order to reduce it, to adopt more efficient methods, and to employ its products to the best possible advantage. There has been a tendency toward investigation of opportunities for the utilization of new revenues or of finding a more profitable market for the by-products. It is for this reason, and also because of the repeated requests of interested parties, that the ammonia, or, as it is better known to you, the ammoniacal liquor, has of late received more attention than heretofore.

Heretofore, comparatively few works are awake to the fact that thousands of dollars are wasted annually through their inattention to the ammoniacal liquor incidentally produced within their doors.

Through the agitation and presentation of facts and figures have done much to arouse an interest in this product, especially for the purpose of obtaining additional revenue to the annual income. While a great many gas works have come of them with but a small output—have adopted, during the last few years, a process of concentrating their crude ammoniacal liquor, and have thus managed to remain behind the line of progress. Of nearly one hundred American gas works, only about one hundred and fifty utilize ammoniacal liquor in some form or another. Some works do not produce ammoniacal liquor, but there are hundreds with an aggregate consumption of over a hundred thousand tons of coal per annum, that are wasting ammoniacal liquor resultant from that carbonization. Assuming a conservative estimate, that their ammoniacal liquor will not exceed one hundred pounds of twenty per cent. NH_3 in the liquor per ton of coal burned, we arrive at the surprising amount of seven million two hundred thousand pounds of twenty per cent. NH_3 liquor which is lost to America and more especially to the gas works.

Ammoniacal liquor is now a staple product on the market, and it is obtained to supply the wants of the various branches of industry dependent upon the product. In nearly all instances where ammoniacal liquor is used, sulphate of ammonia can be substituted, and the shortage of the liquor be caused through an unusual demand; but for reason the large manufacturing establishments of the country have not been embarrassed as yet concerning whence to draw supplies.

Where do American gas works the source of such supplies, and does the capital produce this source of income to its principal? Oh, no, we prefer to waste millions of pounds annually which could with a small expenditure largely decrease our dependence upon our foreign neighbours; but instead of utilizing whatever quantity of liquor our American gas works produce, we go to foreign markets and bring in thousands of tons of ammonia in various forms, while millions of pounds are wasted at our doors.

Questions will naturally be asked. First: How will it pay us to produce the crude ammoniacal liquor? Secondly: If all gas works produce and sell the liquor, would this not have a tendency to create an over-production, and therefore reduce its value below a profitable basis of profit?

Replying, I will more especially refer to gas works carbonizing one hundred and fifty to three thousand five hundred tons of coal per annum, as most companies, with a larger consumption have an advantage before this of giving the ammoniacal liquor proper

value. In computing the pecuniary advantage of this investment, expectations should be built upon a basis which would apply to ordinary conditions, and upon which a corporation would be prepared to

enlarge its works—in other words, to expect a fair and reasonable return from a permanent expenditure connected with the undertaking. An investment in the commercial world, yielding its principal fifteen per cent. per annum and more, I may say, is considered a desirable opportunity. Why should, then, the utilization of ammoniacal liquor be considered differently? Is it not worth while to reduce the general cost of gas a few cents per thousand feet without even entailing expenses other than the first investment? The years have gone by when the profits of gas companies would soon equal the cost of the fundamental investment; and it is to-day the small savings at this and that end of the works which help to swell the amount to be earned for a dividend. Whenever the ammoniacal liquor is saved, as a matter of consequence other savings are made which increase directly and indirectly the benefits from the investment. In giving proper attention to the saving of all the liquor produced, the liquor must be subjected to a thorough settling, and it is thus relieved of a considerable quantity of tar, which would be carried away with it into the sewer, providing the liquor were not saved. This saving, small as it may appear, increases the accumulation of tar by at least ten per cent.; and estimating this at 6/- per barrel, is this not worth saving? This result should be added to the profits stated before.

Again, you derive indirect benefits. The method of saving the crude liquor compels you to use the weak liquor for the washing of the gas, and you are therefore in a position to extract almost all ammonia at the scrubber, instead of allowing the purifiers to take care of it. Your purifying material will be allowed to serve longer, less time is required to change the foul boxes, and your expense account as well as your gas receives the benefits.

To attain all these results you will not be called upon to increase your pay-roll or incur other expenditures save that of the cost of the concentrating plant, and as the latter can be obtained on most convenient terms as regards the method of payment, there is no reason why your attention to the question should be put aside because of a possible doubt that the undertaking will not pay. Give the washing of the gas reasonable attention, let a scrubber of sufficient capacity (not the boxes) eliminate the ammonia from the gas, save the liquor from all sources, prevent the escape of ammonia gas from defective storage tanks, and you cannot fail of success, and at the end of the year the pecuniary results will be most gratifying. If these suggestions are carried out it will prove to you that even on a small carbonization your efforts will be not only well rewarded, but that the money invested has earned you, without doubt, from fifteen to seventy-five per cent.

The second question, not less important than the first, can be answered by an explanation of general conditions in America pertaining to ammonia.

The steadily advancing improvements of refrigerating machines has caused an almost universal use for them on land and sea, thereby constantly increasing the demand for ammonia, the only refrigerating agent used to any extent. Thousands of farms depend, from year to year, upon sulphate of ammonia as an artificial fertilizer. A number of old and new branches of American industries depend upon ammonia as an important raw material in one form or another. Neither one of these channels will ever cease to be an outlet, and more ammonia than now produced will be required in the future. The adoption of the water-gas process by a large number of our gas works as an auxiliary to their plant, and the abandoning of the coal process entirely at some places, has, during the last five or ten years, decreased the domestic resources of ammonia. During the last two years over twenty-six million pounds of ammonia, in various forms, were imported by the United States. While this may seem an unusually heavy importation, there is no doubt that Europe will always supply us with a portion of our requirements. As you all know, efforts are being made, with all prospects of an early success, to introduce the various systems of coke ovens into America for the purpose of utilizing the by-products, and especially the ammonia, resultant from the process. While we may expect with certainty large quantities of ammonia, in the liquor as well as in the salt, from this new source, you can safely assume that any increase in our home production will either be taken care of by a larger demand or will decrease the importation. However, as the increasing demand for refined ammonia will steadily keep pace with the production of the raw material, I see no danger of an over-production in this country, notwithstanding a reasonable importation of the article from foreign countries.

I therefore recommend to you the saving of your ammoniacal liquor, which is not only a source of a remunerative and additional income, but is also in line with the principle of economy.

In the course of the discussion Mr. Osius further stated that 30,000,000 pounds of sulphate of ammonia was the entire production of the United States annually, and that this entire 30,000,000 pounds was used for fertilizing purposes only; so that there is a large amount to supply for mercantile, chemical, and other purposes. From this it will be seen that it would be almost impossible to get an over-production in America.

Agricultural Notes.

THE VALUATION OF MANURES.

THE Highland and Agricultural Society once more issue their useful scale of unit values for the determination of a fair price for fertilizers. The classification adopted is as follows:—

"Fish Guano.—Finely ground, and containing not more than 3 per cent. oil. Frey-Bentos Guano.—(a) Meat meal, free from horn, yielding over 11 per cent. nitrogen. (b) Mixed scrap, yielding 6 to 7 per cent. nitrogen and 30 to 40 per cent. phosphates. Bone Meal.—(a) 90 per cent. passing $\frac{1}{8}$ -inch sieve. (b) Coarser. Genuine bone meal contains 45 per cent. to 55 per cent. phosphates and from $\frac{3}{4}$ per cent. to $\frac{4}{5}$ per cent. nitrogen. The better qualities contain little or no fat. Steamed Bone Flour.—Ground to flour, and containing about 60 per cent. phosphates and about 2 per cent. nitrogen. Dissolved Bones.—Must be pure—i.e., containing nothing but natural bones and sulphuric acid. Mixtures.—To be valued according to the unit values (as given below) of the ingredients of which they are guaranteed and also found to be composed, with an addition of from 5 to 10 per cent., according to the fineness of their manufacture. Thomas-Slag and Ground Phosphates.—Fineness of grinding is of paramount importance. The coarsest kind used should be so finely ground that 80 per cent. passes through a sieve of 10,000 holes per square inch.

The following table gives the unit values for the present season, which are compulsory on all local analytical associations receiving grants from the Highland Society, and are based on the present retail prices at port. When these units are multiplied by the percentages in the analysis of a manure, they will produce a value representing very nearly the cash price at which one single ton may be bought in fine serviceable condition. Larger purchases may be made on more favourable terms.

UNIT VALUES FOR SEASON 1895.

ITEMS TO BE VALUED.	GUANOS.		SCRAP MANURES.		
	Icahoe.	Peruvian (Riddled)	Fish Guano.	Frey-Bentos Guano.	
	Genuine	Genuine.		a.	b.
Phosphates dissolved ..	..	..	..	..	..
" undissolved ..	2/3	2/3	1/4	1/6	1/4
Nitrogen ..	21/-	21/-	13/6	15/6	13/6
or Ammonia ..	17/3	17/3	11/1	12/9	11/1
Potash ..	..	3/6	..	..	..
Prices per Ton, } From	250/-	200/-	105/-	150/-	120/-
March, 1895. } To..	270/-	280/-	140/-	190/-	140/-

ITEMS TO BE VALUED.	BONE MANURES.				Super-phosphates.
	Bone Meal.		Steamed Bone Flour.	Dissolved or Vitriolated Bones.	
	a.	b.			
Phosphates dissolved ..	..	..	..	3/-	1/11
" undissolved ..	1/2	1/-	1/4	1/6	..
Nitrogen ..	11/-	10/-	12/-	14/-	..
or Ammonia ..	9/-	8/3	9/10	11/6	..
Potash ..	..	..	..	..	..
Prices per Ton, } From	105/-	100/-	105/-	105/-	25/-=48/-
March, 1895. } To..	110/-	105/-	110/-	120/-	36/-=69/-

The following examples show the method of applying the above units:—

Take the Analysis of the Manure, and look for the following substances:—

Phosphates dissolved (or soluble phosphate) ... } No other items
Phosphates undissolved (or insoluble phosphate) } but these are to
Nitrogen } be valued.
Potash }

Should the Analysis or the Guarantee not be expressed in that way, the Chemist or the Seller should be asked to state the quantities in these terms.

Suppose the Manure is Bone Meal:—

There are two classes of Bones, according to their fineness. ordinary Bone Meal will fall under Class (a), and it will cost about 50 per cent. Phosphate and $\frac{4}{5}$ per cent. Nitrogen. 7 units for Bones, Class (a), are $\frac{1}{2}$ for insoluble Phosphate, and 11/- for Nitrogen. Therefore the value is—

Insol. Phos., 50 times $\frac{1}{2}$, equal to... £2 18 4
Nitrogen, 4 " 11/- " ... 2 4 0

Say £5 2 0 per ton

Suppose the Manure is Dissolved or Vitriolated Bones:—

It must be guaranteed "Pure."

The units in the Schedule are 3/- for soluble Phosphate, $\frac{1}{5}$ insoluble Phosphate, and 14/- for Nitrogen.

The Analysis will be about 15 per cent. soluble Phosphate, 20 cent. insoluble Phosphate, and $\frac{2}{5}$ per cent. Nitrogen. In case the value would be—

Sol. Phos., 15 times $\frac{3}{5}$, equal to... £2 5 0
Insol. do., 20 " $\frac{1}{5}$ " ... 1 10 0
Nitrogen, $\frac{2}{5}$ " 14/- " ... 1 15 0

Say £5 10 0 per ton

Suppose the Manure is a Superphosphate, say an ordinary Superphosphate, with 27 per cent. soluble Phosphate and 3 per cent. insoluble Phosphate. It is valued thus:—

Sol. Phos., 27 times $\frac{1}{11}$, equal to... Say £2 12 0 per ton
Insoluble Phosphate is not valued in a Superphosphate.

The units have reference solely to the Commercial Value of Manures, and not to their Agricultural Values.

Thus, in stating Soluble Phosphate in Dissolved Bones at 3/- unit, and that in Superphosphate at $\frac{1}{11}$, it is meant that these are prices per unit at which Soluble Phosphate can be bought in these manures; but it does not mean that the Soluble Phosphate in the is $\frac{1}{11}$ per unit better as a Manure than that in the other. It probably no better.

UNSOLVED PROBLEMS.

Sir John Lawes recently drew attention to the fact that the exhaustion of the soil under continuous wheat-cropping without manure Rothamsted has been very slow. Eighteen bushels per acre were grown in the favourable season of 1894, the last time manure was on the land having been fifty-five years ago. Owing to a series of unpropitious seasons between 1871 and 1883 the average yield of unmanured land was lower than it has been during the last ten years. Still, there is a gradual diminution in the crop going on; and, if seasons were all exactly alike, instead of being widely different, might expect to find this decline to be precisely the same each year. Cereal crops not only possess the property of obtaining their food from unmanured soil over very long periods of time, while root and leguminous crops fail to do so; but they can be increased very largely with great certainty by the application of ordinary or artificial manure. If, as appears to be probable, it should further be proved that due to the exhaustion incident to the long-continued growth of cereal crops fertility can be restored and a fresh series of corn crops taken becomes apparent how the exhausted soil of one generation may be fertile soil of a succeeding one. The knowledge that leguminous plants derive a portion of their nitrogen from the atmosphere has up to the present time, continues Sir John Lawes, been of no practical advantage to the farmer: "while it was still only an idea, had already made use of it as far as it would go." On the model ground at Rothamsted, where no leguminous crop has been allowed to grow, trefoil has made violent efforts to establish itself. Upon a field which had grown beans until it refused to grow them any longer next crops of red clover—another leguminous plant—could be grown whilst, upon the wheat land, when put out of cultivation, every sort of native herbage has found food suitable to its requirements.

What, asks Sir John Lawes, will be the solution of all the problems? Will the day come when seeds are sent out furnished with the appropriate organisms to supply the deficiency in our fields? The last half-century has seen the rise of artificial manures and their establishment upon a secure basis; the next generation must take up a new line of inquiry, and what line is likely to lead to more important results, or to be more beneficial to the farmer, than an inquiry into the habits of the leguminous plants?

THE BEET AND MANGEL BEETLE.

Much interest attaches to the discovery by M. Fonquier d'Hérou of a means of successfully coping with the ravages of the beet mangel beetle, *Silpha opaca*. It is a troublesome pest in France in the mangel beet crops, and there is no apparent reason why it should not at a time place the English mangel crop in jeopardy as occasionally it is done. The grub or larva of this beetle grows to about half an inch

feeds upon the young leaves of the beet and mangel. In appearance it presents considerable resemblance to a wood-rough this latter is not an insect. As fields of beet and mangel have had to be resown in France this season because the pest has destroyed the blaird, M. d'Hérouel's communication to the *Nationale d'Agriculture* is a timely one. His method is to treat the young plants with a mixture containing per 100lb., 15lb. of oil, 1lb. of soap, and 84lb. of water. In a few moments the plants are seized with convulsions which speedily prove fatal. The mixture is made immediately before use, and it is observed that the effect is more rapid in its effects if applied when the sun is shining. One gallon, or nine gallons, of the liquid is sufficient for an acre, depending on some time of the material to the sprayed plants to protect them against a new attack by fresh insects, and the crop itself is saved in any way.

FRENCH AGRICULTURAL PRIZES.

Agricultural prizes offered by the *Société d'Encouragement pour l'Agriculture Nationale*, for competition in 1896, include 3,000f. for the best cultivation of vineyards on chalk soils; 2,000f. for the best study of the vine in different regions of France, and of the influence of various processes of vinification upon the quality of wine; for the best investigation into the comparative physical and chemical constitution of the soils of one of the natural or agricultural regions of France; 1,500f. for the introduction and culture, on a large scale, of a new forage plant; and 1,500f. for the best varieties of barley and wheat. The Parmentier prize of 1,000f. is offered for researches to improve the material or the processes of the agricultural and chemical industries. In the chemical section there is a prize of 1,000f. for the utilization of waste products. The prizes in the mechanical section include 3,000f. for an engine of 25 to 100-horse power using steam, when working, $7\frac{1}{2}$ kilogrammes (16½lb.) of steam per indicated horse-power, and 3,000f. for the best motor fuel for commercial oil. In the section of economic arts there is a prize of 1,000f. for the invention of a process in which at least 0.8 kilo-gramme (1¾lb.) of petroleum can be used without danger as a source of heat, either for industrial purposes or in domestic economy. Prizes are open to the competitors of all nations, but essays must be in French. Competitors must send in before December 31st to the Secretary, 44, Rue de Rennes, Paris. The competitions for 1896 include a prize of 2,000f. for improvements in methods of grain; 2,000f. for the best investigation into the deterioration of wine; and 3,000f. for an investigation of alcoholic ferments.

THE PHYSICAL PHENOMENA OF THE ATMOSPHERE.

LECTURE on the phenomena of the high regions of the atmosphere was delivered recently at the Royal Institution by M. Cornu, F.R.S. Mons. Cornu began by comparing the atmosphere to an immense thermo-dynamic engine, the sun being the heat, and the interplanetary space the condenser. The most striking phenomena took place in the almost inaccessible parts of the atmosphere, and, though the difficulties of getting information from these elevated regions were great, yet he hoped to show that the science was beginning to know much of the real explanation of atmospheric phenomena, and was even able to reproduce them in his laboratory. Among the unexpected static phenomena discovered by balloons in mountain observatories, M. Cornu instanced three—namely, that many clouds which had generally been regarded as composed of vapour were composed of minute crystals of ice; that at high altitudes the direction of the wind was different; and that the temperature did not get steadily lower as the earth became more distant, but that alternate layers of hot and cold air were encountered. The last of these facts might have been ascertained by indirect consideration of certain optical phenomena. From the fact that it might be inferred the presence of ice crystals in cirrus clouds; the power of refracting light, and refraction of the sun's light passing through cloud would fully explain the halo. It could be reproduced artificially by passing a beam of light through a strong solution of sulphuric acid, with a little alcohol added. The alternations of heat and cold in the atmosphere were deducible from the various forms of clouds which depended on the reflection of light from the surface of different layers. M. Cornu gave an ingenious reproduction of the "glow," sometimes seen in the Bernese Oberland, for an example. A valley between two peaks would become filled with light from the influence of the sun, and the path of the rays of light from the surface of the hot layer would be convex as regarded the earth. After sunset the hot air would rise and the cool take its place, thus producing a hot layer of air above a cooler one. Light from the sun would now be reflected into a concave shape which would bend down and illuminate the mountain, though it was in fact below the horizon. M. Cornu then pro-

ceeded to speak of the dynamic phenomena of the air. He said that the solar energy was of three kinds—mechanical energy (appearing as winds, cyclones, etc.), of calorific energy (shown by the change of the state of matter, as of water into vapour), and electrical. He only proposed to deal with the first of these. The wind was the most simple mechanical manifestation, and had its origin in the difference of atmospheric pressure in two distant places. It never blew in the direction of the line joining the points of greatest and least pressure, but always obliquely to the isobarometric lines, and usually with a circular movement round the points of highest and lowest pressure. When from any cause the equilibrium of the atmosphere was broken down, circular movements of enormous force, such as tornadoes and cyclones, were set up. The lecture concluded with the exhibition of an artificial waterspout.

LEGALITY OF THE SALES OF CHILIAN NITRATE FIELDS.

THE recent attempted sale of nitrate fields by the Chilean Government has, according to recent information, proved a complete fiasco. It now appears that the legality of these sales is disputed by a certain party in Chile. The *Chilian Times*, which seems to side with the Government in this matter, goes into the question at some length. Referring to an interpellation on the subject of the sale of the Government nitrate properties, to take place on May 15th, our contemporary remarks that it is contended that "the Government has no authority to effect this sale." This contention, however, the *Chilian Times* maintains, "like all the counts in the indictment against the Government prepared with such elaborate care by the member for La Laja, has no foundation in fact. The Act of Congress of November 29th, 1893, empowers the President of the Republic, for a term of five years, to sell by auction the nitrate works in Tarapacá which became the property of the Government by the payment of the certificates issued by the Government of Peru. The Act also empowers the President of the Republic to sell in the same form the nitrate grounds therein mentioned. Under the provisions of this Act two sales have already taken place—one on June 15th and the other on October 15th, 1894. Some of the works and some of the grounds remained unsold, and the Government considered it to be advisable to offer them again, and for some time past they have been advertised to be sold by auction on the 15th of last month. The member for La Laja, and others who think with him, were desirous that this sale should not take place, with the view of promoting in some mysterious manner known only to themselves the nationalisation of the nitrate trade. The Minister, however, has studied the matter in all its bearings, and he has arrived at the only possible conclusion under the circumstances. The Government is bound by every consideration to abide by the offers of sale published in London, Paris, Berlin, and New York. The object the Government had in view in offering these properties for sale was considered and discussed in all its bearings in Congress. The Senate went so far as to appoint a committee to consider and report on the nationalisation of nitrate, but nothing came of the appointment. Several prominent members of that body expressed their opinions on the matter, but it is hardly necessary to point out that simple opinions, no matter how weighty they may be, do not constitute a resolution of a deliberate assembly. In point of fact, the Senate, at the sitting of January 28th of the current year, endorsed the opinion of the Government with respect to the authority given to the President of the Republic to sell the nitrate properties being still in force. At that sitting, during the debate on the fourth clause of the Conversion Bill, a member proposed to amend the clause to read: 'All the proceeds of the sales of the nitrate properties already disposed of shall be devoted exclusively to the acquirement and coinage of silver,' instead of: 'All the proceeds of the sales of the nitrate properties shall be devoted exclusively,' &c. The motion to amend by the insertion of the words we have italicised was thrown out, and this action of the Senate lent additional weight to the opinion of the Government's legal advisers that the authority conferred upon the President of the Republic by the Act of November, 1893, is still in force. These functionaries are of the opinion that the authorisation in question will remain in force until the expiration of the five years prescribed in the Act of 1893, or until all the properties enumerated in the Act are disposed of. Nevertheless, the Minister of Finance says that the actual Government had no intention of decreeing new sales if any of the properties offered on the 15th ult. had not been disposed of."

"BLOXAM'S CHEMISTRY."—Messrs. J. and A. Churchill have nearly ready a new edition, re-written and revised, of "Bloxam's Chemistry—Inorganic and Organic," by Professor Thomson, of King's College, and Mr. Arthur Bloxam, head of the chemical department, Goldsmiths' Institute. Several new woodcuts have been introduced and obsolete ones omitted.

Market Reports.

TAR AND AMMONIA PRODUCTS.

are again easy at 1s. and 11d. for 90's and 50/90's respectively. There has been a slight change in carbolic acids: Crude, 60%, easier at 1s. 7½d., but crystals are firm at 6½d. for 40%. Shitha keeps steady at 5½d. and solvent at 1s. 1d. Creosote Anthracene easier at 1s. 0½d. for 30% A, and 9½d. to Pitch steady at 36s. 6d. to 37s. f.o.b. East Coast. has been fairly well doing in sulphate of ammonia. Makers firm, especially forward. Spot prices are reported rather there is less business doing in consequence. The nearest:—London £9. 17s. 6d., Liverpool £9. 17s. 6d., Hull £9. 15s., £9. 15s., all prompt. Nitrate is dull.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

—Palm oil is quiet, with a small business doing at £20. 15s. to the small amount of olive that is offering prices consistent with a moderate demand. Linseed is dearer, Liverpool export casks being quoted 22s. 9d. to 23s. per cwt. Cottonseed steady at 18s. 3d. to 19s. for Liverpool refined, and 18s. 3d. for American. Owing to arrivals castor oil is slightly higher good seconds Calcutta selling at 2½d. First pressure being held at 2½d. per lb. Tallow is but quiet, though unchanged. Resin continues dear, with a moderate demand. Turpentine are selling steadily at 23s. per cwt. Petroleum 84d. to 8½d. for American, according to quality, and 6d. per Russian refined.

JRS are steady, without alteration in prices. Oxfordshire, common, £10., medium, £12., best, £15. 2s., common, 40s.; medium, 50s., best, 60s.; Welsh, best, 50s., and common, 18s.; Irish, Devonshire, 40s. to 45s., J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Umber: quiet; Devonshire, 50s. to 55s. White lead, £16. Red lead Venetian red, £6. to £10. Cobalt: Prepared oxide, black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2, oxide of iron: Common, £7.; medium, £10.; finest, £20. 10s. to £25.

THE METAL MARKETS.

ON, WEDNESDAY.—Pig iron, quiet: Scotch warrants 43s. 2½d., Middlesbrough 34s. 11½d. cash, and hematite Copper, steady: Chili bars, G. O. B.'s and G. M. B.'s, £42. 11s. 3d. to £42. 16s. 3d. cash, and £43. to £43. 5s. Tin, firm: Straits closed at £62. to £62. 10s. cash, 17s. 6d. to £62. 17s. 6d. three months; Australian, £62. 15s.; pig iron, £66. Lead, quiet: Spanish, £10. 10s.; English, £10. 15s.; Silesian spelter: ordinary, £14. 12s. 6d. 2½d. Antimony, £32. 5s. Quicksilver: first hands, second hands, £7. 8s. 6d. Copper shares, steady: Cape, 2 to 2½; Copiapo, 2 to 2½; Libiola, 3¼ to 3½; Mason and Rio Tinto, 16½ to 16¾; Tharsis, 4¾ to 5. TOW, WEDNESDAY.—Market steady, with small business. at 43s. 2½d. cash; closing with buyers at 43s. 2½d. cash, 43s. 3d. Cleveland closes with buyers at 34s. 11½d. cash, 35s. 0½d. Cumberland hematite done at 43s. 4d. cash; with buyers at 43s. 3½d. cash, sellers ask 43s. 4½d. Middlesbrough hematite closes with buyers at 42s. 4d. cash, sellers ask 42s. 7d.

REPORT ON MANURE MATERIAL.

the week the market has been quiet but steady, prices remaining without alteration. For 75/80 Florida phosphate rock sellers ask 7¾d. per unit in cargoes c.f.&i. to good U.K. ports, will not give the price, and some concession will have to be made any important business. South Carolina River rock ½d. per unit. The value of Peace River rock is barely 6d. and that of Algerian of similar grade is not over 5½d. There is a fair inquiry for cargoes of River Plate bones, and £4 5s. could be paid for anything of handy size, summer-autumn. For large cargoes £4. 5s. would hardly be obtainable. per ton would be accepted for crushed Calcutta bones, but under £4. 7s. 6d. would do for crushed Kurrachee, autumn £4. 10s. now asked for Bombay bone meal, shipment in

any position. Nitrate of soda is steady, at 8s. 3d. per cwt. for good to 8s. 4½d. for refined on spot. The value of cargoes, September-October shipment, is about 8s. 5d. per cwt. The contemplated combination of producers no doubt has something to do with the present firmness of the market, but the hardening tendency of freight and exchange is a more tangible factor to be reckoned with in the case.

LIVERPOOL MINERAL MARKET.

Our market has ruled very quiet during the last week, chiefly in consequence of the Whitsuntide holidays. There is, therefore, very little business to report this week, and prices remain without alteration. Manganese: There are no arrivals to report this week. Ground manganese continues in steady request without alteration in figures, at £6., £8., £10., and £12. 10s. per ton. Manganiferous ore is quiet at 15s. to 17s. 6d. per ton for cargoes. Bauxite: Irish Hill brands are in strong demand for alum and other purposes, and prices remain firm and unaltered at 20s. per ton for first quality, 16s. per ton for second quality, and 12s. per ton for third quality, f.o.b., in cargoes. French chalk: Arrivals are small, and the market has ruled quieter owing to the holidays, but orders are now coming in freely at full prices, viz., 70s., 80s., 90s., and 110s. per ton for "Angel White" and "Gold Medal" brands, according to quality. Plumbago is in good request at £5. to £6. per ton for foundry and lubricating qualities, with other grades in proportion. Arsenic continues firm at about £16. per ton. Barytes: Carbonate is in rather quiet demand, but prices are firm at: Small, 70s., and lump 85s. and 110s. per ton, according to grade. Sulphate is unaltered, the demand for both lump and powdered qualities being steady; prices for powdered sulphate are firm at: No. 1, 60s. to 70s. per ton; No. 2, 55s.; and No. 3, 47s. 6d. to 50s. per ton. Fuller's earth is in increasing demand, especially for the better qualities: lump, 50s. to 55s. per ton; and ground about 55s. per ton; impalpable powder, 80s. per ton. Ochres and umbers are in fair inquiry, J.C. ochre being done at 60s. per ton, and prime levigated umber at 40s. to 60s. per ton, f.o.r.

MISCELLANEOUS CHEMICAL MARKET.

The general demand for alkalis and bleaching powder is fairly good, the export business being more brisk. There are, however, very few changes to report in current values. Caustic soda stands at the same prices as quoted last week, viz.:—F.o.b. Liverpool, 77%, £9. 7s. 6d.; 74%, £8. 7s. 6d.; 70%, £7. 10s.; 60%, £6. 10s. per ton, 10-ton lots and upwards. Soda ash in all qualities without alteration. Ammonia alkali (bags), £3. at makers' works, and £3. 2s. 6d. to £3. 5s. f.o.b. Soda crystals flat, at £1. 15s. per ton (bags) f.o.r.; chlorate of potash, 4½d. per lb.; chlorate of soda, 6½d. per lb., business in the two latter articles being rather quieter. Bleaching powder steady, at £7. f.o.r. makers' works, and £7. 5s. per ton f.o.b., lower special prices being taken for certain markets to meet foreign competition. Sulphate of copper steady, at £15. 15s. f.o.b. Recovered sulphur, £3. 12s. 6d. per ton. Vitriol and muriatic acids are steady in price, with average demand. Brown acetate of lime quiet and unchanged in value, at £5. 5s. to £5. 10s. per ton nett c.i.f. Grey acetate of lime nominal only. Demand for potash, caustic, and carbonate continues fairly active, and prices are steady, with rather a tendency to advance. Yellow prussiate of potash quiet at 7¾d. Nitrate of soda slightly firmer, at £8. 2s. 6d. per ton. Sulphocyanides are offered at rather easier rates. Cyanide of potassium also lower. White powdered arsenic continues very scarce, and price £14. 15s. to £15. per ton.

TYNE CHEMICAL REPORT.

TUESDAY.

Chemicals continue to be in fair demand, and shipments fully up to the average. Caustic, 76/77%, £9. 5s. to £9. 10s.; 70%, £7. 15s. Sulphur, £3. 17s. 6d. per ton. Other quotations as under:—Bleaching powder, softs, £7. 5s. per ton, nett; hard, £7. 10s. per ton, nett; caustic soda, 76/77%, £9. 10s. per ton, nett; do., 70%, £7. 15s. per ton, nett; recovered sulphur, 2 cwt. bags, £3. 17s. 6d. per ton, nett; soda ash, 48%, £3. 12s. 6d. per ton, nett; do., 52%, £3. 17s. 6d. per ton, nett; do., 56%, £4. 10s. per ton, nett; alkali, 36%, £2. 15s. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, £4. 15s. per ton, nett; do., 52%, £5. 5s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, £6. per ton, nett; do., 1 cwt. kegs, £6. 12s. 6d. per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, nett; do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. 6d. per ton, nett; soda crystals, casks, £1. 17s. 6d. per ton

gross weight; do., 2 cwt. bags, £1. 17s. 6d. per ton, nett; chlorate of potash, 5½d. per lb., less 6%; pearl hardening, £3. per ton, nett; pure white sulphate of alumina, £4. 2s. 6d. per ton, nett; blanc fixe, £7. 10s. per ton, nett; chloride of barium, £7. 10s. per ton, nett; carbonate of alumina, £28. 15s. per ton, nett; aluminate of soda, £33. 15s. per ton, nett; in 5 ton lots, £28. 10s. per ton, nett.

SALT.—South Durham salt firm at 9s. to 9s. 6d. per ton, f.o.b. Tees.

COALS.—Trade is fairly steady to-day, and altogether there is a better demand. Best Northumbrian steam firm at 8s. 9d. to 9s. per ton; second qualities, 7s. 9d. to 8s. per ton; small steam, 3s. 6d. to 3s. 9d. per ton; gas coals quiet at 6s. 6d. to 7s. per ton; bunker coals plentiful from 6s. 3d. to 7s. 3d. per ton; coke firmer at 12s. 6d. to 14s. per ton.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—Seed crushing here is almost at a standstill, which may be the cause more than some think of the continued advance in linseed oil, for a crusher must find a suitable demand also for his cake, and this he can hardly do at this season of the year, when linseed oil is inquired for from all directions. The import this week of linseed has been 3,474 qrs. from St. Petersburg; of cottonseed the import has been 2,072 tons from Alexandria. Linseed oil has improved by another £1. per ton during the week, making an advance of about £2. per ton in about a fortnight, closing firm at 21s. 3d. per cwt. on the spot, and 21s. month. Forward July-Aug. 20s. 6d., last four months 19s. 7½d. Boiled and refined, from £1. to £1. 10s. per ton extra. The export for the week, 1,840 cwt. Cottonseed oil, refined flat, at 16s. 6d. naked spot. June-Aug. offer at 16s. 9d., and Nov.-April at 17s. 3d. Crude, on the spot, 15s. sellers. Casks 17s. 6d., and petroleum barrels 27s. 6d. per ton extra. Export of refined, 2,700 cwt. for the week. Cod oils are quiet at the advance. Herring oil none. Castor oil from 2¼d. per lb. for first pressure. Spirits of turpentine, 23s. 9d. per cwt. Boiled drying oil, £12. per ton. Liquid scouring soap for wool dressing, £15. per ton. Liquid wool cream for carding purposes, £11. per ton.

CAKES.—Linseed cakes steady, but small spot demand, 95% pure, £6. to £6. 2s. 6d. Russians, £5. 15s. Oil cakes, £5. 2s. 6d. Cotton cakes, best makes, £4. to £4. 2s. 6d.; seconds, £3. 15s. Demand quiet. Rape cakes unaltered.

PAINTS.—Trade in these and allied articles continues very brisk. Ready-mixed paints, in 1, 2, 4, 7, and 14 lb. tins, from £23. per ton Venetian red, oxide of iron, green, blue, and black paints from £11. per ton. White and red lead unchanged. Yellow ochre dry, £3. 17s. 6d. Venetian red dry from £4. per ton. Mineral black dry from £4. per ton. Ultramarines from 3d. to 8d. per lb. Vermilionettes from 4d. to 1s. per lb. Black varnish in brisk demand, £5. 10s. per ton in barrels. Oak varnish from 5s. 6d. per gallon.

WEST OF SCOTLAND CHEMICALS

GLASGOW, TUESDAY.

The market in general chemicals is decidedly more hopeful in its symptoms than for a considerable time past, and prices are well maintained all over. Soda crystals, reported last week as in reduced stocks, have advanced slightly, and for some consumptive markets the quotation is now 35s. to 37s. 6d. nett Tyne. The bustle of the Baltic shipping preparations now shows signs of some slackening down, and inquiries for that outlet are scarcely so active. Bichromate of potash and bichromate of soda, from the Scotch works, are reported as in rather better demand, and dye chemicals generally are looking up slightly.

There are no changes of value in the mineral oil and paraffin sections, but at the same time there is but little call for prompt delivery, and makers, though busy manufacturing, are so chiefly in anticipation of the new season, which will begin to show signs of opening in about three months' time from now.

Sulphate of ammonia has been stationary at last week's price, but pretty firm thereat.

Chief prices current are:—Soda crystals, 35s. to 37s. 6d. nett, Tyne; soda ash, 48/52°, £3. 15s. to £4. 5s. nett, Tyne; white alkali, 48/52°, £4. 10s. to £5. 5s. nett, Tyne; alum in lump, £5. 10s. nett, Glasgow; caustic soda, white, 74° £9., 70/72° £7. 15s., 60/62° £6. 15s., and cream 60/62° £6. 10s., all nett, Liverpool; bleaching powder, £6. 5s. to £7., nett, Tyne; maltcake, 17s. 6d.; borax, English refined, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 5-cwt. casks, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4¼d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow);

chlorate of potash, 5½d. less 5%, Liverpool; nitrate of 8s. 3d. to 8s. 6d.; sulphate of ammonia, £10. prompt f.o.b. I. sal ammoniac, first and second white, £39. and £37. nett, any sulphate of copper, £15. 12s. 6d., less 5%, Liverpool; paraffin scale, 2½d.; and soft, 1½d. to 2¼d. per lb.; paraffin wax 120° semi-refined, 2½d. to 2¾d.; paraffin spirit (naphtha), 5d. to 6d. per gal. paraffin oil (burning), No. 1, 6½d., and crystal 6¾d., at works Scotch buyers (English sales 1d. lower); ditto (lubricating), £4. 5s.; 885° £4. 10s. to £5., and 890/895° £5. to £5. 10s. W. imports of sugar at Greenock were 17,225 baskets of cane sugar and 18,210 bags beet unrefined.

New Companies.

Park House Dyeing Co., Ltd.—CAPITAL £50,000, in £10. s. This company has been formed to carry on the business of bleaching, dyeing, printers, &c. The subscribers to the memorandum of association are:—W. W. Pilkington, The Hazels, Prescott, manufacturer; Pilkington, Clifton, Manchester, colliery proprietor; A. Pilkington, Rivington, Pendleton, colliery proprietor; C. Pilkington, The Hazels, Prescott, colliery proprietor; L. Pilkington, South Pendleton, colliery proprietor; J. Smith, Ashton-street, Hey chemist; M. Pilkington, 4, The Hazels, Prescott, glass manufacturer.

Steinhoff, Sons, and Muir, Ltd.—CAPITAL £17,750, in £10. s. shares. This company has been formed to acquire the business Messrs. Steinhoff, Sons, and Muir, 20, Jewry-street, E.C., a trade as colour and chemical merchants, manufacturers, and importers. The subscribers to the memorandum of association are:—E. Steinhoff, 20, Jewry-street, E.C., merchant; R. W. Muir, 20, Jewry-street, E.C., merchant; G. J. A. Steinhoff, 20, Jewry-street, merchant; F. A. F. Steinhoff, 20, Jewry-street, E.C., merchant; W. E. Latchford, 96, Hainault-road, Leytonstone, clerk; J. P. 40, Marchant-street, Bow, traveller; R. Ballard, 230, Dalston N.E., clerk.

North British Plumbing Co., Ltd.—CAPITAL £10,000, in £1. each. This company has been formed to enter into an agreement with W. D. Scott-Moncrieff and to carry on the business of engineers and contractors for sanitary drainage and sewerage. The subscribers to the memorandum of association are:—W. Moncrieff, 14, Victoria-street, S.W., engineer; G. B. Ellis, Chancery-lane, W.C., patent agent; C. Weedon, Uxbridge, Common, Surrey, gentleman; P. R. Free, 3, Warrington-cum Maida Hill, gentleman; L. G. Sandford, Howard House, Arundel-street, W.C., solicitor; H. Beard, Howard House, Arundel-street, W.C., clerk; H. West, 3, Lordship Park, Green Lane, gentleman.

The Patent List.

This list is compiled from Official sources in the Mechanical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report progress upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT

Improvements in Coke Ovens and Recovery of Bye-Products. Key and W. S. Key. 10,355. May 27.
Treating Gold-bearing Antimony Ores. J. J. Christmas. 10,356. May 27.
Stamping and Embossing Soap. O. Geipel. 10,415. May 27.
Bleaching Ramie Fibre, etc. R. W. E. McIvor and J. Chester. May 27.
Manufacture of Carbon Dioxide from Sulphates. W. von Baross. May 27.
Improvements in Air and Gas Compressors. Tangyes, Ltd., and Johnson. 10,418. May 27.
Manufacture of Cyanides, etc. W. P. Thompson. 10,448. May 27.
Electrolysis of Alkali Salts with Mercury Cathode. H. C. F. 10,445. May 27.
Improvements in Manufacture of Sodium, etc. L. Falero and H. D. 10,448. May 27.
Manufacture of Cyanides and Ferro-cyanides from Sulphocyanides and the Recovery of Bye-Products. J. Raschen and J. Brock. May 27.
Self-contained Electrical Grinding Machine. C. Fann. 10,518. May 27.
Improved Grinding Machine. S. W. Margets and J. Cuthbert. May 27.
Protecting Soap. S. J. H. Row. 10,523. May 27.
Treating Chlorides for the Production of Chlorine and Alkalies and the Recovery of Bye-products. R. Main and W. Donald. May 27.
Bleaching Paper-Pulp. F. Steble. 10,716. May 27.
Manufacture of Magnesia and Calcium Carbonate. M. N. 10,725. May 27.
Treating Cement-making Materials. J. F. de Navarro. 10,744. May 27.
Storage Batteries. C. Payer. 10,836. May 27.
Extracting Water from Starch Paste. C. V. V. Genteroyen. May 27.
Manufacture of Rubber. F. Ellenhausen. 10,872. June 2.

Improvements in Sewage Treatment Compositions. C. A. Burghardt. 10,891. June 1.
Charcoal Dryers. J. Houston. 10,894. June 1.
Improved Colours and Pigments. S. Kleemann. 10,900. June 1.
Subjecting Liquids to action of Gases for Formation of Chemical Compounds, particularly Alkaline Carbonates. W. von Baranoff. 10,917. June 1.
Washing Crude Wool. F. Raschig. 10,918. June 1.
Recovering Metals from Sulphide Ores. J. A. Mays. 10,927. June 1.
Improvements in Oil Presses. G. Mitchell. 10,928. June 1.
Apparatus for Electrolysing Chloride Solutions. E. Hermite, E. J. Paterson and C. F. Cooper. 10,929. June 1.
Apparatus for Electrolysing Chloride Solutions. E. Hermite, E. J. Paterson, and C. F. Cooper. 10,930. June 1.
Decomposing Sulphuretted Hydrogen and Obtaining Ammonia and its Compounds Oxysulphides, Sulphide, and Sulphur. O. Inray. 10,931. June 1.
Artificial Musk. H. H. Lake. 10,946. June 1.
Manufacture of Saccharine. C. Fahlberg. 10,955. June 1.
Manufacture of Cyanides and Ferro-cyanides from Sulpho-cyanides and Recovery of Bye-Products. J. Raschen and J. Brock. 10,956. June 1.

Gazette Notices.

PARTNERSHIP DISSOLVED.

W. and T. SAVAGE, agricultural merchants, Salkeld Dykes, near Penrith.

W. MANUEL, H. ELLIOTT, and F. E. HOWELL, under the style of Manuel, Elliott and Howell, Sheffield, manufacturing chemists.

M. P. SQUIRRELL and S. W. UTTING, corn, seed, and cake merchants, Norwich, under the style of Squirrell and Utting.

BANKRUPTCY ACTS, 1883 and 1890.

Receiving Order.

J. JEFFRIES, oil and colour dealer, North-street, Bedminster, Bristol.

Adjudication.

W. CRIPPIN, dyer and manufacturer, Faulkner-street and Egerton Mills Patricroft.

IMPORTS OF CHEMICAL PRODUCTS AT THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending June 1st.

Acetate of Lime—
U. States, 443 bgs. Johnson & Hooper

Acetic Acid—
Holland, 50 pkgs. Philipps & Graves

" 225 A. & M. Zimmermann

Acetone—
Germany, 20 pkgs. T. H. Lee

Holland, 10 A. J. Humphrey

" 4 Philipps & Graves

Alum—
Holland, 20 pkgs. Ohlenschlager Brs.

Belgium, 10 Beresford & Co.

Holland, 55 H. Wallace & Co.

Alumina Sulphate—
Holland, 67 pkgs. R. W. Greeff & Co.

Aluminium—
Belgium, £340 Major & Field

Germany, 97 H. Lambert

Antimony Ore—
Corsica, 40 t. J. Bamber

" 40 F. Williams

" 762 Smith, Sundius & Co.

Asbestos—
U. States, £600 Deering & Robottom

Germany, 7 Craven & Co.

France, 8 Girard Frs. & Co.

Italy, 480 Brit. Asbestos Co.

" 472 Baynham & Co.

Barytes—
Germany, 22 cks. T. Robertson

Belgium, 120 W. Harrison & Co.

Germany, 23 J. L. Lyon & Co.

" 19 S. H. Willoughby

Holland, 21 Beresford & Co.

" 23 O'Hara & Hoar

" 33 Colthurst & Harding

Boric Acid—
Italy, 24 pkgs. Coml. L. Co.

" 10 B. & N. Wf. Co.

Bromide of Iron—
Germany, 15 pkgs. A. & M. Zimmermann

Camphor—
Japan, 70 tubs R. Warner & Co.

Germany, 85 pkgs. Union L. Co.

" 24 City Coml. Wf.

Caoutchouc—
Germany, 8 c. Wallace Brs.

" 68 Forbes, Forbes & Co.

M'dagasc'r, 500 Hammond & Co.

Zanzibar, 18 Clarke & Smith

Germany, 169 L. & I. D. Jt. Co.

Zanzibar, 13 "

E. Indies, 130 "

Greytown, 84 Prop. Bull Wf.

E. Indies, 33 Ralli Brs.

U. States, 25 c. Prop. Bull Wf.

France, 5 H. Johnson & Sons

Caster Oil—
Belgium, 68 brls. Fuerst Brs.

Italy, 10 cs. City Coml. Wf.

" 36 Stebbing & Co.

France, 30 Beresford & Co.

E. Indies, 10 Anderson, Weber & Smith

Caustic Potash—
Holland, 99 c. J. M. Steel & Co.

Belgium, 98 Petri Brs.

France, 50 Spies Brs. & Co.

" 100 A. J. Smith

Belgium, 30 A. B. Curtis & Co.

Caustic Soda—
Holland, 2 c. J. Barber & Co.

Chemicals (otherwise undescribed)
Germany, 10 pkgs. £12 A.

Belgium, £10 Willcox & Co.

Holland, 5 T. H. Lee

" 1 Hernu, Peron & Co.

" 7 J. Owen

France, 1 L. C. & D. Rly.

Germany, 6 J. Barber & Co.

" 4 L. & I. D. Jt. Co.

Holland, 25 J. Barber & Co.

Germany, 100 T. H. Lee

U. States, 50 Anderson, Weber & Smith

Belgium, 23 T. Palmer

Germany, 173 A. & M. Zimmermann

Chloride of Lime—
Belgium, 23 pkgs. H. Wallace & Co.

Cobalt Ore—
Sydney, 4 c. Harold Brs.

Cream of Tartar—
Spain, 25 pkgs. B. & F. Wf. Co.

France, 10 W. C. Bacon & Co.

Spain, 5 B. & F. Wf. Co.

France, 11 Kirkpatrick & Co.

Holland, 34 Fellows, Morton, & Co.

Italy, 12 Ldn. & W. Eng. Yeast Co.

France, 2 Stevenson & Co.

Creosote—
Germany, 6 pkgs. Stevenson & Co.

Dyestuffs—
Annatto 2 pkgs. Johansen & Jorgensen

France, 5 R. J. Fullwood & Co.

Argols 7 pkgs. L. & I. D. Jt. Co.

Cape, 29 Thames S. T. & Co., Ld.

Italy, 29 "

Cutch 682 pkgs. J. Swire & Sons

E. Indies, 30 Ralli Brs.

France, 60 pkgs. J. Graves

" 145 L. J. Levinstein & Sons

Canada, 240 A. J. Humphrey

Belgium, 20 Leach & Co.

U. States, 255 W. Burton & Sons

" 293 L. & I. D. Jt. Co.

Denmark, 31 Bailey & Leatham

Holland, 200 J. Barber & Co.

Fustic 22 t. Darling Brs.

B. Honduras, 22 t. J. Swire & Sons

E. Indies, 1,770 pkgs. Brown & Elmslie

Germany, 110 E. Boustead & Co.

E. Indies, 884 W. Balchin

" 1,816 Brown & Elmslie

" 454 Beresford & Co.

" 161 G. Ward & Sons

" 1,378 Indigo

E. Indies, 33 cts. Stansbury & Co.

" 53 L. & I. D. Jt. Co.

Egypt, 56 F. Claydon & Co.

E. Indies, 60 Elkan & Co.

" 25 Croysdale & Co.

" 13 F. W. Heilgers & Co.

" 6 R. Von Glehn & Sons

" 11 Arbuthnot, Latham & Co.

" 13 Madder

Holland, 6 pkgs. W. Balchin

Myrabolams 18 pkgs. A. & W. Nesbitt

E. Indies, 2,388 L. & I. D. Jt. Co.

" 200 Dalton & Young

" 1,350 E. D. Sassoon & Co.

" 667 Darling Brs.

" 1,216 Whitstable S. Co.

Shumac 28 pkgs. Soundy & Sons

Italy, 100 Union L. Co.

" 50 Skilbeck Brs.

Tanner's Bark 52 t. Leach & Co.

Natal, 6 Flack, Chandler & Co.

Melbourne, 50 Bostcher, Mortimore & Co.

Natal, 62 A. & W. Nesbitt

Germany, 100 Devitt & Hett

Natal, 9 Union L. Co.

Germany, 22 Deering & Robottom

" 43 Turmeric

E. Indies, 100 pkgs. S. Figgis & Co.

" 20 Arbuthnot, Ewart & Co.

" 217 R. G. Hall & Co.

Hong Kong, 200 Crosse & Blackwell

E. Indies, 20 J. T. Morton

" 100 Clarke & Smith

" 181 L. & I. D. Jt. Co.

Farina—
Holland, 50 pkgs. Dunlop Brs.

" 50 J. Knill & Co.

" 130 H. Lorenz

" 20 J. Barber & Co.

Germany, 300 Ohlenschlager Brs.

French Chalk—
Austria, £40 Harrison & Co.

Italy, 92 "

Gamboge—
E. Indies, 11 cs. L. & I. D. Jt. Co.

Glucose—
Germany, 27 pkgs. 230 c. J. Knill & Co.

France, 200 200 c. G. Clark & Son

" 400 400 L. Norman

U. States, 1,000 1,000 & Co., Ltd.

" 825 1,162 Humphrey & Co.

" 2,983 7,602 c. Fellows,

" 1,993 2,466 Morton & Co.

" 250 250 L. Sutro

" 50 300 & Co.

" 590 3,260 R. G. Hall

" 50 300 & Co.

" 50 300 Harrison,

" 50 300 Burton & Co.

" 50 300 T. J. Lipton

" 1,000 1,000 T. M. Duhe & Sons

" 1,000 1,000 Union L. Co., Ltd.

" 1,137 1,725 G. Hedges & Son

" 199 1,144 Beck & Pollitzer

" 69 370 Deering & Robottom

" 500 500 Soundy & Sons

" 611 1,025 Pearce, Pelly, & Co.

" 500 500 Devitt & Hett

" 50 300 Thames S. T. & Co.

" 398 2,372 J. Newcomb

" 50 285 Prop. Scott's Wf.

" 15 16 Ohlenschlager Brs.

" 50 300 L. & I. D. Jt. Co.

" 250 500 C. Southwell & Co.

" 250 500 Vokins & Co., Ltd.

Glue—
—, £861

Manure—
Sydney, 100 t. A. Hunter & Co.

E. Indies, 203 Fox, Roy, & Co.

France, 310 Lawes Manure Co., Ltd.

Belgium, 5 H. & E. Albert

Methyl Alcohol—
Germany, 10 drs. Honeywill Brs.

Belgium, 5 H. Lorenz

Mica—
E. Indies, £33 F. Claydon & Co.

" 1,055 W. M. Smith & Sons

Molasses—
U. States, 50 cks. 265 c. Prop. Scott's Wf.

" 50 265 L. Sutro & Co.

" 200 1,080 J. Newcomb

Ochre—
France, 20 cks. Union Whvs. Co.

Holland, 17 pkgs. Philipps & Graves

U. States, 70 brls. Page, Son, & East

France, 178 cks. W. Harrison & Co.

" 7 O'Hara & Hoar

Paraffin Wax—
U. States, 96 brls. G. H. Frank

" 227 Mordaunt Brs.

U. States, 284 pkgs. Anglo-American Oil Co.

White Rock— 250 t. Lawes Manure Co., Ltd. 240 Anglo-Contl. G. Wks. 150 Odams Manure Co. 510 A. Hunter & Co.	Tartaric Acid— Holland, 8 pkgs. F. C. Devon & Co. Italy, 12 Fellows, Morton & Co. France, 8 B. & F. Wf. Co. Italy, 72 Holland, 10 H. Wallace & Co. " 15 B. & F. Wf. Co. " 11 Kirkpatrick & Co.	Colours— Rotterdam, 3 cks. Hamburg, 1 cs. Antwerp, 4 Cream of Tartar— Barcelona, 20 brls. Pons V. Llopont " 5 cks. Dextrine— Stettin, 50 bgs. J. Buntin & Co.	New York, 5 cs. R. Co. " 50 bks. Single Lagos, 1 ck. 2 brls. Radl Boston, 4 cs. J. Thayer Marseilles, 200 " 10 " 157 Philadelphia, 337 32 H. A. B.
Acid— 20 pkgs. Bailey & Leatham Argo— 7 cks. Brown & Elmslie 70 brls. Doulton & Co. 205 R. G. Hall & Co. 18 cks. Fellows, Morton, & Co.	Turpentine— N. Russia, 104 brls. Chiesman & Co. " 26 cks. Dussek Bros. & Co. Ultramarine— Hong Kong, 20 bks. City Coml. Wf. Co. Belgium, 13 brls. W. Harrison & Co. Holland, 4 cks. Arnati & Harrison " 21 pkgs. D. Storer & Sons " 21 pkgs. Hernu, Peton & Co.	Dyestuffs— Argols Patras, 26 cs. Bucura & Economo " 11 brls. Papayanni & Jeremias Cochineal Gd. Canary, 20 bgs. Roberts & Evans " 57 Kennedy & Moore Cutch Rangoon, 1,954 bks. Extracts Bordeaux, 225 cks. Baltimore, 10 brls. Houston & Laurisch	Soapstone— Bordenaux, 300 bgs. G. C. Black & Sons Starch— New York, 50 bks. Boston, 335 bgs. Rotterdam, 279 cs. Antwerp, 191 J. T. Fitt
Varnish— Germany, 6 pkgs. L. & I. Dk. Co. France, 21 Schenker & Co. " 4 Flageolet & Co. White Lead— Germany, 4 cks. Haefner, Hilpert & Co. Germany, 71 M. Ashby, Ld. Belgium, 20 Colthurst & Co. " 19 Randall Bros. " 25 Brandram Bros. " 10 brls. J. L. Lyon & Co. France, 44 W. Harrison & Co.	Wood Pulp— Canada, 9,504 bks. E. J. & W. Goldsmith Norway, 200 Moreton Cox Bros. Sweden, 4,368 Henderson, Craig & Co. Germany, 35 Thames S. T. & L. Co., Ld. Belgium, 1,545 F. Claydon & Co. Norway, 550 Tough & Henderson Holland, 700 Ekman Pulp & Paper Co. Sweden, 2,176 E. J. & W. Goldsmith " 4,239 Tough & Henderson Norway, 360 Christophersen & Co. Sweden, 82 W. E. Bott & Co. " 82 W. G. Taylor & Co. Norway, 82 Henderson, Craig & Co. " 700 E. J. & W. Goldsmith Holland, 488 Daily Telegraph Co. Germany, 508 E. J. & W. Goldsmith Holland, 302 J. Owen Austria, 1,030 W. Friedlaender Denmark, 200 G. F. Green & Co. Holland, 54 Tough & Henderson Norway, 100 Johnsen & Jorgensen	Orchella Madeira, 1 bg. A. Braga & Co. Sumac Palermo, 1,000 bls. Valonia Patras, 285 bgs. Papayanni & Jeremias " 540 Alike, 479 136 t. "	Stearine— New York, 13 bds. 6 cs. Talc— Marseilles, 100 bgs. Tallow— Rouen, 14 cks. W. Sale Society, Sons & Co. Boston, 6 tcs. Tartar— Bordenaux, 5 cks. Tartaric Acid— Marseilles, 34 cks. Rotterdam, 16 Treacle— Boston, 50 brls. Stettin, 216 cks. B. G. Gevke & Co. Philadelphia, 1,000
Carbonate— 30 c. J. A. Reid 40 A. Zumbach 25 J. Owen Cyanide— 30 pkgs. Phillippis & Graves Hydrate— 11 pkgs. Spies Bros. & Co. Oxalate— 12 pkgs. Beresford & Co. Sulphate— 249 pkgs. A. J. Smith Stone— 1 t. W. K. Graham 11 B. Galloway 930 t. Anderson, Anderson, & Co. 1,150 Mason & Barry, Ltd. 1,120 C. L. Vasey & Co. 500 F. C. Hills & Co.	Zinc Oxide— Holland, 50 cks. Burrell & Co. " 50 pkgs. J. Matton " 50 pkgs. Prprs. Dowgate Dk. " 75 brls. M. Ashby, Ltd. U. States, 100 Belgium, 20 Colthurst & Co.	Glucose— Rotterdam, 10 cks. New York, 1,345 brls. Glue— St. Nazaire, 5 bls. 14 cks. Hamburg, 35 25 bgs. Marseilles, 96 62 Rotterdam, 25 Lactic Acid— Boston, 10 kgs. J. Taylor & Co.	Waste Salt— Dunkirk, 100 bgs. White Lead— Rotterdam, 84 cks. Wood Pulp— Rotterdam, 108 bls. Zinc Ashes— Bordenaux, 174 bgs. Zinc Oxide— New York, 100 brls. Antwerp, 35 Rotterdam, 50 cks. Zinc Skimmings— New York, 25 brls. Zinc White— Rotterdam, 85 cks. Hamburg, 7
Liver— 100 brls. H. Bath & Son 8 L. & I. D. Jt. Co. 500 P. & O. S. N. Co. 5,167 flsks. N. M. Rothschild & Son 17 cs. H. Lambert 150 brls. H. Hill & Sons 59 bgs. Lucas & Spencer's Wf. Co. 114 Devitt & Hett 85 J. Greig 204 cks. Lucas & Spencer's Wf. Co. 40 J. Hall & Son 143 P. Hecker & Co. 630 W. Harrison & Co. 4,720 A. Haacke & Co.	LIVERPOOL. Week ending May 30th. Acetate of Lime— New York, 850 bgs. Manchester Ship Canal Co. " 3,849 Arsenic— Huelva, 22 cks. Matheson & Co. Barytes— Rotterdam, 33 cks. Bone Ash— Harburg, 250 t. Bone Meal— Bombay, 5,134 bgs. Castor Oil— Marseilles, 7 cks. J. J. Mack & Sons " 30 T. H. Boxall " 28 Henderson Bros. " 120 152 brls.	Paraffin Scale— Baltimore, 100 brls. Paraffin Wax— Rangoon, 453 cs. Phosphate— Bona, 1,400 t. Antwerp, 280 Potash— Antwerp, 10 dms. Dunkirk, 22 Potassium Carbonate— Rouen, 50 cks. Co-op. W. Sale Society, Ld. Pumice Stone— Tenerife, 49 cks. 663 bgs. Messina, 54 cs. Pyrites— Huelva, 1,632 t. Matheson & Co. " 2,000 Beaufort & Co. Rosin— New York, 600 brls. C. Singlehurst & Co. Boston, 2,500 Savannah, 2,700 Rotterdam, 4 cks. Salt— Hamburg, 400 t. Saltpetre— Hamburg, 4 cks. Soap— N. Orleans, 923 brls.	MANCHESTER Week ending June 1st. Acetate of Lime— New York, 3,123 bgs. Albumen— Ghent, 6 cs. Alumina Sulphate— Rotterdam, 24 cks. Aluminous Cake— Rotterdam, 50 bgs. Asbestos— Rotterdam, 3 cts. Bone Ash— Harburg, 249 t. Robinson & Hall
Bichromate— 27 pkgs. C. Tennant, Sons, & Co. Hypsulphite— 16 pkgs. J. Owen 16 Beresford & Co. 40 pkgs. Arnati & Harrison 40 J. Barber & Co. 214 Taylor Bros. 62 Leach & Co. 708 Prop. Scott's Wf. 72 T. H. Lee 2,270 Horne & Co. 52 Phillippis & Graves 1,550 Sawyer, Sons, & Co. 1,044 Magee, Taylor, & Co. 101 Little & Johnston 940 H. Johnson & Sons 190 F. Claydon & Co. 195 R. Warner & Co. 190	Chemicals (otherwise undescribed) Rotterdam, 2 cks. Philadelphia, 36 Chrome Ore— Montreal, 1 brl. Bolling Low Cloric Acid— Bordeaux, 4 cks.	Salt— Hamburg, 400 t. Saltpetre— Hamburg, 4 cks. Soap— N. Orleans, 923 brls.	Castor Oil— Antwerp, 85 brls. Colours— Rotterdam, 24 cks. 29 cs. 13 brls. Ghent, 26 pkgs. 2 cks. Dyestuffs— Alizarine Rotterdam, 70 cks. 1 cs. Extracts Treport, 97 cks. 2 cs. Nantes, 62 J. & P. Huchon Fustic Hamburg, 2,732 bgs.

Wood	
na (Mexico), 6,270 qntrs.	
bechy, 11,850	
mac	
ssol, 70 bls.	
a—	
burg, 90 bgs.	
h Chalk—	
ort, 2 cs.	
ine—	
rdam, 2 cs.	
se—	
rdam, 4 cks.	
York, 150 brls.	T. M. Duche & Sons
rdam, 90 bgs. 1 ck. 11 cs.	
ort, 13 10 bls.	
stone—	
erp, 2 cs.	
rge—	
rdam, 30 cks.	
al White—	
aux, 400 bgs.	J. & P. Hutchinson
Acid—	
rdam, 15 cks.	
in Scale—	
York, 150 brls.	Standard Oil Co., Ltd.
h—	
aux, 5 cks.	J. & P. Hutchinson
rdam, 20	
burg, 20	
ium Carbonate—	
burg, 6 cks.	
ce Stone—	
rdam, 3 cs.	
burg, 6 cs.	
rdam, 2 cs.	
rdam, 20 brls.	
m Acetate—	
ort, 36 cks.	
h—	
rdam, 70 cs.	
erp, 170	
it, 36	
burg, 400	
York, 495 bgs.	T. M. Duche & Sons
r Emetic—	
burg, 10 cks.	
ric Acid—	
rdam, 27 cks. 30 kgs.	
aux, 12 cks.	J. & P. Hutchinson
oxalate—	
rdam, 12 brls.	
e Salt—	
ort, 14 cks.	
erp, 20 bgs.	
burg, 100 3 lots	
Lead—	
t, 5 brls.	
Pulp—	
rdam, 13,728 bls.	
esund, 140	
heim, 4,176	
them, 7,552	Thin & Sinclair
Spirit—	
burg, 8 dms.	
Oxide—	
rdam, 80 brls.	
White—	
rdam, 10 cks.	

HULL.

Week ending June 1st.

te of Lime—	
enburg, 2 bgs.	Wilson, Sons, & Co., Ltd.
Acid—	
rdam, 20 blns.	W. & C. L. Ringrose
	34 cks. Wilson, Sons, & Co., Ltd.
burg, 8	"
en, 4 cs.	Veltmann & Co.

Arsenic—	
Hamburg, 22 brls.	Wilson, Sons, & Co., Ltd.
Asbestos—	
Riga, 700 bgs.	
Barytes—	
Bremen, 21 cks.	Blundell, Spence, & Co.
Antwerp, 100 bgs.	Bailey & Leatham
Castor Oil—	
Trieste, 3 cs.	Wilson, Sons, & Co., Ltd.
Chemicals (otherwise undescribed)	
Trieste, 1 ck.	Wilson, Sons, & Co., Ltd.
Hamburg, 3 cs.	"
Bremen, 15 pks.	Veltmann & Co.
Antwerp, 67	Wilson, Sons, & Co., Ltd.
Dunkirk, 59 dms. 1 ck.	"
Cod Oil—	
Christiansund, 52 brls.	Wilson, Sons, & Co., Ltd.
Aalesund, 125	"
Bergen, 91	"
Colours—	
Rotterdam, 215 cks.	W. & C. L. Ringrose
Rotterdam, 7 pks.	
Trieste, 78	Bailey & Leatham
Antwerp, 6	Hutchinson & Son
Rotterdam, 8 95 pks.	Hutchinson & Son
Danzig, 25	Wilson, Sons, & Co., Ltd.
Rotterdam, 5	J. Good & Sons
Hamburg, 4	Wilson, Sons, & Co., Ltd.
Antwerp, 49 20 pks.	"
Dextrine—	
Stettin, 100 bgs.	Wilson, Sons, & Co., Ltd.
Dyestuffs—	
Alizarine	
Rotterdam, 71 cks.	
" 4 brls. 14 pks.	Hutchinson & Son
" 36 cks.	W. & C. L. Ringrose
Cutch	
Bombay, 600 bxs.	Wilson, Sons, & Co., Ltd.
Indigo	
Kurrachee, 36 cs.	Wilson, Sons, & Co., Ltd.
Madder	
Rotterdam, 3 cks.	Hutchinson & Son
Myrabolams	
Bombay, 14,886 bgs.	
Sumac	
Palermo, 1,482 bgs.	Wilson, Sons, & Co., Ltd.
" 1,168	
Valonia	
Trieste, 42 bgs.	Wilson, Sons, & Co., Ltd.
Smyrna, 103 t.	
Farina—	
Harlingen, 347 bgs.	
Stettin, 100	Wilson, Sons, & Co., Ltd.
Hamburg, 1,000	
Gelatine—	
Antwerp, 11 cks.	Bailey & Leatham
Glue—	
Hamburg, 5 crts.	
Manure—	
Antwerp, 50 t.	Wilson, Sons, & Co., Ltd.
Mineral White—	
Trieste, 100 brls.	
Fiume, 50 bgs.	Wilson, Sons, & Co., Ltd.
Naphtha—	
Danzig, 1 pkge.	Wilson, Sons, & Co., Ltd.
Naphthol—	
Hamburg, 14 cks.	Wilson, Sons, & Co., Ltd.
Paint—	
New York, 180 pks.	Wilson, Sons, & Co., Ltd.
Phosphate—	
Antwerp, 500 bgs.	Wilson, Sons, & Co., Ltd.

Phosphate Rock—	
Bana, 500 t.	
Ferandina, 550	Hammond, Emes, & Co.
Soap—	
Molfetta, 250 bxs.	Wilson, Sons, & Co., Ltd.
Soda—	
Rotterdam, 1 ck.	Hutchinson & Son
Starch—	
Antwerp, 80 cs.	Wilson, Sons, & Co., Ltd.
Rotterdam, 50	Chancellor & Co.
Bremen, 1,899	Veltmann & Co.
Antwerp, 256	Bailey & Leatham
" 25	J. Good & Sons
Stearine—	
Antwerp, 92 bgs.	Wilson, Sons, & Co., Ltd.
Sulphur—	
Catania, 1,434 pks. 50 t.	Wilson, Sons, & Co., Ltd.
Tartar—	
Rotterdam, 2 cks.	Hutchinson & Son
Tartaric Acid—	
Rotterdam, 7 cks.	Hutchinson & Son
" 1	Woodhouse & Co.
Treacle—	
New York, 75 brls.	Wilson, Sons, & Co., Ltd.
Turpentine—	
Trieste, 6 cs.	Wilson, Sons, & Co., Ltd.
Ultramarine—	
Rotterdam, 5 cs.	Hutchinson & Son
" 4 cks.	Sissons Brs. & Co.
Yarnish—	
Rotterdam, 1 brl	Hutchinson & Son
Waste Salt—	
Hamburg, 780 bgs.	
" 400	Wilson, Sons, & Co., Ltd.
White Lead—	
Rotterdam, 116 cks.	Hutchinson & Son
" 19	Sissons Brs. & Co.
" 10	J. W. Davis & Son
" 18	Johnson Brs.
" 18	Storry, Witty, & Co.
" 27	Sanderson & Co.
Wood Pulp—	
Antwerp, 2 bls.	Wilson, Sons, & Co., Ltd.
Helsingfors, 100	J. Good & Sons
" 44	Furley & Co.
" 342	
Zinc Oxide—	
New York, 60 brls.	
Zinc White—	
Antwerp, 48 cks.	Bailey & Leatham

GLASGOW.

Week ending June 6th.

Acetate of Lime—	
New York, 243 bgs.	
Alum—	
Rotterdam, 228 bgs.	J. Rankine & Son
Aniline—	
Rotterdam, 8 brls 6 bxs.	J. Rankine & Son
Arachide Oil—	
Rotterdam, 1 ck.	J. Rankine & Son
Barium Sulphate—	
Antwerp, 100 bgs.	
Barytes—	
Rotterdam, 46 cks.	J. Rankine & Son
Cellulose—	
Hamburg, 500 bls.	
Cottonseed Oil—	
New York, 78 brls.	
Cream of Tartar—	
Marseilles, 5 cks.	

Dyestuffs—	
Alizarine	
Rotterdam, 21 brls.	J. Rankine & Son
Extracts	
Boston, 175 pkgs.	
Antwerp, 5 brls.	
New York, 1 ck.	
Logwood	
Jamaica, 480 t.	M'Arthur, Scott & Co.
Myrabolams	
Bombay, 1,334 bgs.	
Valonia	
Marseilles, 1,107 bls.	
Glucose—	
New York, 1,757 brls. 250 sks.	
Glue—	
Rotterdam, 40 bgs.	J. Rankine & Son
Hamburg, 60 9 cks	
Kelp—	
Stavanger, 2,300 sks.	
Nitrate—	
Hamburg, 74 bgs.	
Paint—	
New York, 3 brls.	
Painters' Colours—	
Antwerp, 3 cks	
Rotterdam, 13 2 cs.	J. Rankine & Son
" 22 pkgs.	
Paraffin Scale—	
New York, 270 brls.	
Phosphates—	
Antwerp, 20 cks.	
Ghent, 1,020 bgs.	
Phosphate Rock—	
Savannah, 2,200 t.	
Rosin—	
Rotterdam, 3 cks.	J. Rankine & Son
New York, 2,026 brls.	
Soap—	
Boston, 1 cs.	
New York, 16	
Starch—	
Rotterdam, 50 cs 20 crts.	J. Rankine & Son
New York, 1,000 sks.	
Stearine—	
Amsterdam, 62 bgs.	
Tar—	
New York, 400 brls.	
Tartaric Acid—	
Marseilles, 12 cks.	
Treacle—	
Boston, 50 brls.	
New York, 1 cs.	
Rotterdam, 2 cks.	J. Rankine & Son
Yarnish—	
New York, 22 brls. 4 hf. brls. 1 bx.	
Waste Salt—	
Hamburg, 468 cks. 1,630 bgs.	
White Lead—	
Rotterdam, 38 cks.	J. Rankine & Son
Wood Pulp—	
Gothenburg, 240 bls.	
Gefle, 5,994	Henderson, Craig & Co.
Hamburg, 93 rolls	
Christiania, 3,244	
Zinc Oxide—	
New York, 130 brls.	
Antwerp, 25 cks.	
Zinc Sulphate—	
Rotterdam, 7 brls.	J. Rankine & Son
Zinc White—	
Rotterdam, 215 cks.	J. Rankine & Son

TYNE.

Week ending June 1st.

Alumina—	
Copenhagen, 130 cks.	
Barytes—	
Antwerp, 400 bgs.	Tyne S. S. Co.
Kieselguhr—	
Bergen, 101 bgs.	
Limestone—	
Antwerp, 3 crts.	Tyne S. S. Co.
Oleic Acid—	
Rotterdam, 1 ck.	Tyne S. S. Co.

Phosphate—	
Boma, 400 t. Blaydon Manure Co.	
" 520 Langdale's Chem. Manure Co.	
Antwerp 260	
Phosphate Rock—	
Tampa, 2,105 t. Langdale's Chem. Manure Co.	
Saltpetre—	
Hamburg, 3 cks. Tyne S. S. Co.	
Saltpetre Salt—	
Harburg, 280 t	
Soap—	
Rotterdam, 3 cs. Tyne S. S. Co.	
Starch—	
Antwerp, 41 cs. Tyne S. S. Co.	

Tartaric Acid—	
Rotterdam, 3 cks. Tyne S. S. Co.	
Ultramarine—	
Hamburg, 2 cks. Tyne S. S. Co.	
Wood Pulp—	
Christiania, 10 cs.	
Laurvig, 120 bls.	
Zinc Oxide—	
Antwerp, 20 brls. Tyne S. S. Co.	

GOOLE.

Week ending May 29th.

Alum—	
Rotterdam, 60 bgs.	
Antimony—	
Boulogne, 10 cks.	

Barytes—	
Rotterdam, 7 cks.	
Antwerp, 200 bgs.	
Bog Ore—	
Delfsdyhl, 180 t.	
Chemicals (otherwise undescribed)	
Hamburg, 11 cks.	
Dyestuffs—	
Logwood, 440 t.	
Dyestuffs (otherwise undescribed)	
Rotterdam, 233 cks. 36 cs.	
Boulogne, 35 42	
Phosphate—	
Ghent, 816 bgs.	
Potash—	
Dunkirk, 29 dms.	

Saltpetre—	
Rotterdam, 85 bgs.	
Antwerp, 71	
Sulphur Ore—	
Seville, 1,220 t.	
Waste Salt—	
Hamburg, 590 t. 500 cks.	

GRIMSBY.

Week ending June 21st.

Caoutchouc—	
Hamburg, 1 blc.	
Chemicals (otherwise undescribed)	
Hamburg, 14 cks. 2 cs.	
Rotterdam, 2	
Pitch—	
Dieppe, 10 cks.	

EXPORTS OF CHEMICAL PRODUCTS

OF

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

Week ending June 5th.

Alkali—	
Rio de Janeiro, 7 t. 13 c.	£31
Ammonia—	
Rotterdam, 20 dms.	£35
Hamburg, 15	15
Ammonia and Disinfectants—	
B. Ayres, 7 pkgs.	£26
Ammonia (Liquid)—	
Bombay, 5 cs.	£10
Ammonium Carbonate—	
Cologne, 1 t. 10 c.	£50
Ammonium Chloride—	
Cologne, 8 cks.	£53
Trebiacode, 12 c.	50
Galatz, 4	11
Hamburg, 1 t. 1 c.	50
Ammonium Phosphate—	
Adelaide, 1 c.	£49
Ammonium Sulphate—	
Valencia, 100 t.	£1,000
Ghent, 30	230
Mauritius, 100 13 c.	2,340
Bremen, 25	250
Hamburg, 50	540
Anhydrous Ammonia—	
Colombo, 2 c.	£200
Arsenic—	
Karschi, 1 t. 1 c.	£21
Dunedin, 10	2
Barium Sulphate—	
B. Ayres, 30 cks.	£49
Bleaching Powder—	
Melbourne, 9 t. 10 c.	£130
Boracic Acid—	
Melbourne, 7 cks.	£70
Borax—	
Melbourne, 10 kgs.	£31
B. Ayres, 2 t. 10 c.	55
Valparaiso, 4	10
Adelaide, 10	19
Caustic Soda—	
Algoa Bay, 18 c.	£68
Melbourne, 1 t. 9	47
Mauritius, 13 14	100
Chemicals (otherwise undec.)—	
B. Ayres, 62 cs.	£108
Auckland, 1 10 kgs.	40
Wellington, 7	42
Talcahuano, 1 4 cks.	13
N. Orleans, 2 t.	43
Hamburg, 5 c.	12
Cape Town, 6 cs. 6 dms.	27
Citric Acid—	
Algoa Bay, 2 tanks	£12
Karschi, 2 cs.	20
Rotterdam, 15 kgs.	89
Oporto, 2 cks.	14
Melbourne, 30	120
Brussels, 1 t. 2	12
Hamburg, 1	139
St. Petersburg, 1	123
Odessa, 5 c.	34
Lisbon, 10	68
Oil Products—	
Aniline Oil, 12 cks.	£115
Aniline Salts, 5 cks.	£45

Anthracene	
Dusseldorf, 175 cks.	£1,890
Cologne, 212	1,205
Benzol	
Rotterdam, 23 dms.	£198
Hamburg, 100 cks.	233
Carbolic Acid	
Bombay, 4 cks.	£19
Alexandria, 2 brls.	12
Paris, 15	33
Napier, 5 dms. 1 cs.	10
Coal Tar Dyes	
Boston, 1 cs. 7 cks.	£125
Creosote	
Bordeaux, 230 t.	£498
Dieppe, 23,500 galls.	123
Naphthalene	
Hamburg, 15 cks.	£62
Algoa Bay, 25	46
New York, 97	174
Pitch	
Brindisi, 2,399 t.	£4,200
Boston, 200 brls. 245 bgs.	139
Hamburg, 5 cks.	10
Antwerp, 804 t.	1548
Alexandria, 750 brls.	252
Gijon, 1,000 t.	2,088
S. Lucia, 25 pkgs.	48
Baltimore, 1,183 bgs.	390
Tar Oil	
Hamburg, 250 brls.	£155
Boulogne, 75 cks.	£186
Coal Products (otherwise undec.)—	
Melbourne, 25 brls.	£97
Copper Sulphate—	
Amsterdam, 5 t. 3 c.	£75
Corrosive Sublimate—	
Maha, 2 c.	£13
Cream of Tartar—	
Melbourne, 2 t.	£136
Gibson, 1 3 c.	11
Brisbane, 1 3	84
Rockhampton, 1	69
Christchurch, 3	12
Disinfectants—	
Melbourne, 10 cs.	£15
Paris, 20 cks. 100	15
Singapore, 13	20
Dunedin, 7 pkgs.	10
Bombay, 10 c.	10
Hamburg, 25	125
Hypsulphite of Lime and Soda—	
Barcelona, 7 c.	£88
Manure—	
Bordeaux, 30 t.	£240
Rouen, 10	60
Mauritius, 63 19 c.	755
Barbadoes, 50	500
Jamaica, 25	210
Martinique, 88 13	293
Oxalic Acid—	
Marseilles, 1 t. 6 c.	£35
Antwerp, 10 cks.	100
Phosphorus—	
Wellington, 5 c.	£20
Dunedin, 5 cs.	49
Potash—	
Genoa, 10 c.	£40
Melbourne, 10	25
Potash Salts—	
Auckland, 9 t. 5 c.	£1,217

Potassium Cyanide—	
New York, 20 cs.	£131
Potassium Iodide—	
Oporto, 1 cs.	£66
Potassium Prussiate—	
Antwerp, 7 cks.	£110
Hamburg, 4	36
Saltpetre—	
Melbourne, 4 t.	£91
Pernambuco, 50 6 c.	£1,224
Tangier, 6	130
Amsterdam, 2 5	55
Sheep Dip—	
B. Ayres, 1,500 cs.	£4,725
Launceston, 1 t. 1 c.	38
Melbourne, 300 dms. 4 cs.	350
Algoa Bay, 1 t.	17
Soda—	
Algoa Bay, 10 t.	£22
Soda Ash—	
Rio de Janeiro, 26 t. 10 c.	£96
Soda Crystals—	
Fremantle, 5 t. 2 c.	£18
Bremen, 6	24
Newcastle, 25 1	49
Sodium—	
New York, 3 t.	£448
Ghent, 15 c.	150
Sodium Bicarbonate—	
Algoa Bay, 17 c.	£16
Jamaica, 15	6
Rockhampton, 1 t.	7
Trinidad, 1 10	11
Auckland, 2 5	14
Havre, 10	6
Sodium Sulphate—	
Ghent, 40 t.	£40
Sodium Tartrate—	
Oporto, 3 c.	£10
Strontium Nitrate—	
Oporto, 5 cs.	£30
Sulphur—	
Fremantle, 2 t. 10 c.	£13
Mauritius, 3 15	18
Philadelphia, 2 18	95
Algoa Bay, 13 8	125 kgs 220
E. London, 2 18	30
10 cks.	31
Lisbon, 250 brls.	174
Hamburg, 1	10
Sulphuric Acid—	
Algoa Bay, 3 t. 31 cs.	£57
E. London, 20	16
Colombo, 4 8	39
Superphosphate—	
Mauritius, 100 t. 2 c.	£255
Pernau, 239	597

LIVERPOOL.

Week ending June 5th.

Alum—	
Montreal, 6 t. 8 c.	£45
Corunna, 10 2 q.	5
Vigo, 18 3	5
Varna, 3 2	14
Beyrout, 5 2	25
Talcahuano, 1 9	7
Piramus, 4 10	35
Galatz, 6 8	28
Havana, 6	20

Ammonium Carbonate—	
Corunna, 4 c.	
Elilbao, 4	
Valparaiso, 1 t.	
Naples, 4	
Santander, 1	
Santos, 9 9	14
St. Petersburg, 15	
Yokohama, 1 2	1
Ammonium Chloride—	
Genoa, 2 t. 2 c.	
Alexandria, 2	
Patras, 3	14
Ammonium Sulphate—	
Genoa, 50 t. 15 c.	14
Malaga, 3 18	
Barcelona, 51 3	7
Las Palmas, 35	
Sourabaya, 28 10	1
Valencia, 91 10	1
Amorphous Phosphorus—	
Paranagua, 2 c. 10	
Antimony—	
Alexandria, 1 c.	
Amsterdam, 1	
Vera Cruz, 2	
Arsenic—	
Bombay, 7 c. 14	
Asbestos—	
Maccio, 1 bl.	
Puerto Cabello, 1 cs.	
Santander, 2	
Barium Nitrate—	
Vigo, 1 t.	
Bleaching Powder—	
Baltimore, 124 cks.	
Bombay, 8 cs.	
Bordeaux, 20	
Boston, 490	
Calcutta, 125	
Catania, 12	
Genoa, 107	
Ghent, 71	
Leghorn, 8	
Messina, 12	
Montreal, 70	
Naples, 31	
New York, 348	
Oporto, 15	
Philadelphia, 131	
Portland, Ore., 120 brls.	
Rio de Janeiro, 4	
San Sebastian, 30	
Boiler Composition—	
Pernambuco, 60 dms.	
Bone Ash—	
Rockhampton, 1 t. 3 c.	20
Bone Waste—	
Rouen, 1 t. 15 c.	
Boracic Acid—	
Rotterdam, 10 c.	
Borax—	
Almeria, 4 t.	
Cape Town, 3 1 c.	20
Mazatlan, 3 17	20
Antwerp, 2 17	20
Rotterdam, 14 19	20
Sydney, 3 19	20
Genoa, 3 19	20
Calcium—	
Canterbury, N. Z., 1 t. 2 c.	

Acid—

urg,	15 t.	11 c.	£785
am,	5		40
	9	1 q.	25
ore, 10 cs.	5	13	308
ai, 2	50 dms.		92
ork,	4 t.	14	260

Oil—

alu,	50 dms.		
Potash—			
de,	3 t.	3 c.	£4
ork,	3 t.	18	225

Soda—

de,	60 dms.	4 pkgs.	4 bxs.
ti,	52		
ip,	35		
	200		
ona,	350		
n,	25		
	103		
	30		
y,	20		
50 brls.	25	20 cks.	15
	20		
	20		
	13		
in,	30	6 pkgs.	2
rk,	30		
idon,	10		
	130		
	456		
urg,	195		
a,	75		
	252		

Coal Tar Products (otherwise undecorated)—

rk,	30	6 pags. 2
don,	10	
	130	
	456	
arg,	195	
a,	75	
	252	
Kong,	35	
ayra,	12	
rn,	137	
	45	
B,	30	
cs,	5	
lan,	281	
na,	65	
deo,	173	
sal,	15	5 cks.
	230	
leans,	100	
York,	140	230 brls.
a,	40	
cy	30	
	60	
no,	15	
g,	6	
mbuco,	5	
elphia,	360	
oon,	15	
e Janeiro,	108	
n's, N'dd.,	25	
n,	50	
stersburg,	48	
rang,	117	
illa,	20	
e,	31	
haya,	515	
n,	30	
ry,	15	4 cs.
gusa,	30	
lad,	4	
ciz,	20	
raiso,	50	50 kgs.
Cenz,	57	

Products (otherwise undecorated)

etersburg,	3 t.	15 c.	£44
York,	5	1	2 q. 16
erp,	1		38
delphia,	18	19	43
Clay—			
	2 t.	5 c.	
ona,	45	3	
ay,	35		
	1,600		42 bgs.
itta,	10		
mbo,	5		
m,	12	6	
io,	7	10	
ideo,	10		
ambuco,	5	10	
delphia,	340 cks.		
de Janeiro,	64		
Francisco,	69		

Aniline Salts

Boston,	154 cs.		
Montreal,	8		
New York,	13 cks.		
Rio de Janeiro,	4		
Creosote Salts			
Bordeaux,	59 t.	1 c.	
Naphtha			
Trinidad,	1 ck.		
Naphthaline			
Riga,	50 bgs.		
Pitch			
Cette,	594 t.	8 c.	
Genoa,	900		
Ibrail,	37 brls.	10 bxs.	
New York,	13	10 c.	
Rouen,	2 cks.		
Spezia,	1,380		
Tar			
Abonnema,	15 brls.		
Ambriz,	15		
Callao,	10		
Galatz,	20		
Honolulu,	25	50 dms.	
Noqui,	5		
Philadelphia,	200		
Valparaiso,	25	50 hf-brls.	

Coal Tar Products (otherwise undecorated)—

New York,	7 cks.	20 brls.	
Copperas—			
Varna,	3 t.	12 c.	£5
Copper Sulphate—			
Carril,	1 t.		£16
Vigo,	3		48
Bilbao,	6	1 q.	95
Cette,	512	4 c.	£8,070
Marseilles,	97	14	1,532
Adelaide,	2		2,159
Lisbon,	139	16	1,545
Genoa,	102	15	32
Madras,	2		32
Melbourne,	2		32
Bordeaux,	399	3	4,768
Ghent,	3	4	50
Rotterdam,	4	13	76
Hamburg,	1	2	17
Barcelona,	25	5	427
Ancona,	20	2	318
Trieste,	4	19	76
Bari,	17	2	273
Venice,	154	13	2,386
Leghorn,	25	4	394
Oporto,	4	4	66
Riga,	4	19	77
Norfolk,	8	3	7
Montreal,	49	14	770
Sydney,	6	3	96
Tarragona,	30	1	457
Rouen,	203	9	2,898
Brindisi,	3	12	60
Naples,	1	11	24
Antofagasta,	8	18	107
Bremen,	6	4	3
Algiers,	6	8	99

Cream of Tartar—

Miramichi,	3 c.		£13
Disinfectants—			
Rangeon,	10 c.		£5
Sierra Leone,	1 cs.		5
Alexandria,	2	2 q.	8

Gelatine—

Boston,	74 bxs.		
N. Orleans,	75		

Glue—

Barbadoes,	1 ck.		
Montreal,	1		

Gypsum—

Rio de Janeiro,	2 t.	1 q.	£16
Lamp Black—			
Talcabuan,	10 cs.		
Vigo,	20 bgs.		

Lime—

Axim,	150 kgs.		
Little Popo,	20 brls.		

Litharge—

Valparaiso,	10 cks.		
Magnesia—			
Corunna,	1 cs.	1 ck.	
Havre,	14		
Mayaguez,	5		
M. Video,	1		
New York,	5		

Magnesium Chloride—

Bombay,	9 t.	19 c.	£26
Calcutta,	7		6

Magnesium Sulphate—

Carril,	1 t.	8 c.	1 q.	£7
Bombay,	30 bgs.			
Honolulu,	20 cs.			
Maceio,	15 brls.			
Valparaiso,	20	23 kgs.		
Rangoon,	5			

Manganese—

New York,	1 brl.		
Manganese Ore—			
St. Petersburg,	8 cks.		

Manure—

St. Nazaire,	150 t.	1 c.	£432
Metallic Sodium—			
Rotterdam,	5		977

Ochre—

E. London,	25 brls.		
Santander,	10		
Valparaiso,	60		

Oxalic Acid—

Barcelona,	14 c.	3 q.	£24
Valparaiso,	4		7
Kurrachee,	3		5

Paint—

Abonnema,	2 cks.	4 kgs.	
Accra,	1		
Adjuah,			30 dms.
Algoa Bay,	1		
Amapula,	9		40
Axim,	40		
Beyrout,	55		
Bonny,	14	33	
Calcutta,	14	14	
Caldera,	15		
Cape Town,	13	26	
Cienfuegos,	5		
Colon,	9	40	
Curacao,	192 pkgs.		
Dunkirk,	1	10	2
E. London,	4 cs.		
Genoa,	4		
Hamburg,	49		
Havana,	10	7	
Havre,	1	5	
Hong Kong,	80	80	
Honolulu,	40		
Iquique,	71 bxs.	2 brls.	
La Libertad,	100		
Levis,	40		
Lisbon,	8 cks.	60	
Maceio,	10 brls.		
Malta,	1	98	
Manaos,	2		
Marseilles,	13		
Matanzas,	2		
Montreal,	4		
N. Orleans,	1		
N. York,	6 cs.	4	1 brl.
Pacasmayo,	3		
Para,	2		
Parnahyba,	1		
Pernambuco,	300 kgs.		
Ponce,	2		
Pt. Said,	7		
Punta Gorda,	2		
Rotterdam,	24 pkgs.	40	1
San Francisco,	13 brls.		
Smyrna,	370		
Sourabaya,	5 cks.		
Talcabuan,	78		
Valparaiso,	18	51 brls.	30
Vera Cruz,	16 cs.		
Bilbao,	2 bxs.		

Painters' Colours—

Arecibo,	3 tes.		
Bahia,	1	54 kgs.	2 cs.
Baltimore,	13 cks.		
Barcelona,	1	2	
Belize,	5	50	28
Bombay,	3	1,556	7
Boston,	2	6	1
B. Ayres,	95 brls.	37	550
Calcutta,	20		20
Ceara,	13	10	
Constantinople,	250		
Corunna,	5 brls.		
Halifax,	1		
Hamburg,	2		
Malta,	2		
Manaos,	3	2	14
Mayaguez,	2		1
Monterey,	6		
M. Video,	10		
Montreal,	59	111	1
N. Orleans,	12	790	50
N. York,	360	17	20
Odessa,	64		
Para,	2	60	
Paris,	2		5
Pernambuco,	5	28	
Pt. Natal,	2		
Quebec,	23		
Rio de Janeiro,	1		37
Rotterdam,	50 bgs.	8	
St. John's, Nfld.,	2		5
Seville,	8		
Sierra Leone,	50		
Sydney,	1 brl.	30 dms.	84
Tongshan,	12	173	
Valparaiso,	32 brls.	140 cks.	94
Vern Cruz,	100		132

Paraffin Wax—

Bari,	20 cs.		
Marseilles,	100		
Palermo,	5 bgs.		
Riga,	30		

Phosphate of Lime—

Ferrol,	1 t.	1 c.	2 q.	£29
---------	------	------	------	-----

Phosphorus—

Mexico,	8 c.		£93
Hioho,	2 t.	1	505
Shanghai,	18		180
Pernambuco,	2		28
N. Orleans,	10		110

Plumbago—

Gibraltar,	1 ck
------------	------

Salt Cake—

Gijon,	51 t.	2 c.	3 q.	£90
Philadelphia,	140			210
Newport News,	56	4		60

Saltpetre—

Barcelona,	2 t.	10 c.		£55
Syria,	2		1 q.	45

Sheep Dip—

Valparaiso,	4 t.			£80
-------------	------	--	--	-----

Slag—

Bordeaux,	204 bgs.			
-----------	----------	--	--	--

Soap—

Aden,			125 bdis.	
Adjuah,	40 bxs.			
Alexandria,		50 cs.	2 brls.	
Algoa Bay,	3,232	4		
Amboyna,	1,500			
Amsterdam,	100	100		
Anamaboe,	50			
Antwerp,	28	120		
Axim,	28			
Baltimore,		2		
Barbadoes,	1,182			
Bathurst,	150			
Belize,	100			
Benin,	100			
Berakin,	50			
Bombay,	3,438	27		
Bonny,	250			
Boston,		500		
Buguma,	300			
Calcutta,			250 bdis.	
Canaira,	235			
C. C. Castle,	50			
Cape Town,	3,275			
Cartagena, N.O.,	47			
Chefoo,	400			
Colon,		9		
Colombo,		22	4 cks.	
Constantinople,		5		
Cochimbo,				
Curacao,	248			
Dixcove,	135			
Delagoa Bay,	150	10		
Drewin,	40			
Durban,	600			
E. London,	3,403			
Elmina,	100			
Genoa,	54			
Gibraltar,	170			
Gd. Bassa,	65			
Gd. Lahou,	30			
Grenada,		1		
Havre,	241			
Hong Kong,	650			
Honolulu,		1		
Kurrachee,	513	22		
Lagos,	20			
Kingston, Ja.		5		
Las Palmas,	144			
Lima,		1		
Malta,	60			
Manaos,	300	1		
Melilla,	50			
Monrovia,	20			
Montreal,		1,161		
Moulmein,		3		
Mosel Bay,	1,235			
N. Orleans,	200			
New York,	1,300	2,002	1	
Old Calabar,	400			
Oyoba,	500			
Parnahyba,	50			
Piramus,		1	31 bdis.	
Pt. Elisabeth,	150			
Pt. Natal,	2,380	10		
Punta Gorda,	50			
Quebec,		2		
Rangoon,	750			
Rosterdam,	250			
St. John's, Nfld.,	23	28		
St. Lucia,	240	110		
St. Vincent,	50			
San Juan,	100			
Salt Pond,	50			
Sageli,	100			
Savannah,		14		
Shanghai,	4,063			
Sierra Leone,	150			
Singapore,	3,272			
Smyrna,	24			
Stockholm,		40		
Sydney,		1,430		
Tamperle,	650			
Trinidad,	350			
Valparaiso,		60		
Yalo,	224			
Yarri,	250			

Soda Alkali—

Adelaide,	60 cks.			
Bilbao,	15			
Bombay,		5 dms.		
Cartagena, Sp.,	15			
Constantinople,	15			

N'castle, N.S.W.,

New York,	25	15		
Odessa,		150 brls.		
Oporto,	28			
Shanghai,	54			
Smyrna,		50		
Sydney,	17			
Tunis,	17			

Soda Ash—

Adelaide,	104 brls.			
Algoa Bay,	118 kgs.			
Amsterdam,	20 cks.			
Antwerp,	100 bgs.			
Baltimore,	4,865	126	300 tcs.	
Barcelona,		40		
Bilbao,		9		
Bombay,		82		
Boston,	2,240	252	433	
Brisbane,		169		
B. Ayres,		300		
Calcutta,		50	35 kgs.	
Callao,		40		
Cartagena, Sp.,	22			
Cavalla,		11 brls.		
Ceara,		6		
Dunedin,		143		
Genoa,	100			
Ghent,	210	2		
Gothenburg,	150	24		
Hamburg,	100	125		
Hioho,		210		
Kobe,		352		
Lisbon,		36		
Melbourne,		726		
M. Video,		75	25	
Montreal,	700		21 tcs.	
N. Orleans,		33		
New York,	7,917	46	319	
Norroping,	20	45		
Oporto,		10		
Philadelphia,	2,279	165	680	
Rio de Janeiro,		270	50 brls.	
Rosterdam,		60	15	
Santos,		50		
Shanghai,		8		
Smyrna,		90		
Sydney,		151		
Talcahuano,		50		
Trinidad,		8		
Valparaiso,		150	15	
Wellington,		207		
Yokohama,		260		

Soda Crystals—

Alexandria,	217 cks.			
Alicante,	6			
Bombay,		385 kgs.		
Boston,		796 brls.		
B. Ayres,	100	100		
Calcutta,	32	40		
Cape Town,	20	10		
Hamburg,	20			
Ihrail,	27			
Malta,	200			
Montreal,	110	432	768	
New York,	700		181	
Palermo,		7		
Quebec,		75	10	
St. John's, N.B.,		50		
S. John's, Nfld.,	2 cs.	30		
Talcahuano,		20		
Toronto,	50 brls.			
Valparaiso,	50 bgs.	30	499	

Sodium Arsenate—

New York,	16 cks.			
-----------	---------	--	--	--

Sodium Bicarbonate—

Adelaide,	150 kgs.	95 bgs.		
Algoa Bay,	25			
Amsterdam,	60	6 cks.		
Ancona,	75			
Antwerp,	124	2		
Arica,	1			
Auckland,	47			
Barcelona,	525			
Bilbao,	35			
Bombay,	510			
Bordeaux,	122			
B. Ayres,	70			
Calcutta,	20	6		
Canterbury,	50			
Catania,	50	2		
Colombo,		2		
Carril,		4 brls.		
Constantinople,	20			
Dunedin,	450			
Dunkirk,	7	2		
Galata,		30		
Genoa,	160	77		
Gijon,		9		
Gutejewski,	600			
Hamburg,	140	12		
Havana,	40			
Hioho,	300			
Hong Kong,	10			
Honolulu,		20 cs.		
Kurrachee,	270			

Johannesburg,

Kobe,	20	50 bgs.		
Laghorn,	1,000			
Marseilles,	106	8		
Messina,	40			
Melbourne,	480	11		
Miramichi,	20			
M. Video,	45			
Montreal,	1,205	35	100	
Napier,	40			
Naples,	165	2		
N'castle, NSW.,	40			
N. Orleans,	513			
Newport News,	375	275		
New York,	50	110		
Odessa,	140			
Palermo,	20			
Paris,	34			
Portland, Or.,	25			
Quebec,	420			
Riga,	240			
Rogberrie,	40			
S. John's, N.B.,	400			
San Jose de				
Guatemala,	20			
St. Petersburg,	50			
Singapore,	20			
Smyrna,	205			
Stettin,	45			
Sydney,	30			
Trieste,	70	19		
Valencia,	40			
Vancouver,		3		
Vera Cruz,	110			
Vigo,		6 brls.		
Wellington,	585	19		
Yokohama,	500			

Sodium Bichromate—

Ghent,	32 cks.			
--------	---------	--	--	--

Sodium Bisulphite—

Havre,	1 ck.			
--------	-------	--	--	--

Sodium Carbonate—

Brisbane,	200 kgs.			
-----------	----------	--	--	--

Sodium Chlorate—

Hamburg,	26 kgs.	2 cks.		
Philadelphia,	100			
Rosterdam,	50			

Sodium Prussiate—

Boston,	20 cks.			
---------	---------	--	--	--

Sodium Silicate—

Carril,	5 brls.			
Vigo,	9			

Sodium Sulphate—

Bilbao,	2 brls.			
Rio de Janeiro,	30 cks.			

Sodium Tartrate—

Montreal,	1 ck.			
-----------	-------	--	--	--

Starch—

Iquique,	2 cs.			
Rio de Janeiro,	8 cks.			

Stearine—

New York,	35 cks.			
-----------	---------	--	--	--

Sulphur—

Iquique,	10 t.	3 c.	3 q.	£64
Hamburg,				1,140
Boston,	350	11		274
Montreal,	75			10
N. Orleans,	2			

Superphosphates—

Valencia,	15 t.	16 c.		£36
Cullera,	150			318

Treacle—

Amsterdam,	50 brls.			
Antwerp,	35	95 cks.	30 hf.-pns.	
Belize,	4 cs.			
Geffe,	180		1,100	
Ghent,			105	
Gothenburg,	10	75		
Norroping,	250	25	103 tcs.	
Rosterdam,	22	30		
Stockholm,			665 hf.-pns.	
Sundsvaall,	1,181		300	
Terneuzen,	40		69	

Turpentine—

Ferrol,	10 dms.			
Abonnema,	5			
Trieste,	20 brls.			

Ultramarine—

New York,	10 cs.	1 kg.		
Sydney,	16 brls.			

Yarnish—

Barcelona,	6 cks.			
Bilbao,	5	3 pkgs.	1 bck.	
Calcutta,			1 bx.	
Caleta Buena,			2 cs.	8 dms.
Genoa,	3			
Lisbon,				
Naples,				
Pernambuco,				
Seville,				
Valparaiso,				
Vera Cruz,				77 dms.

White Lead—

B. Ayres,	20 cks.			
E. London,		60 kgs.		
Honolulu,		1		
Rockhampton,		40		

Whiting—

M. Video,	50 brls.			
Santos,	50			
Talcahuano,	50			
Valparaiso,	300			

ng Powder—

17 cks.	
35	
46	
17	
60	
73	

Soda—

3 cks. 1 cs.	
20 dms.	
38	
24	9
5	

als (otherwise undescribed)

12 cks. 28 cs.	
16	
12	
37	
30	
24	40 btl.
17	
10	
72 bgs.	11 4 pks.
10	11
38	20 pkgs.
29	50
3	4
3	4
5	
24	90
7	10

ersburg, 50 13**rsburg, 10 4****rsburg, 5 30****rsburg, 11 6****rsburg, 100 c.****rsburg, 115****rsburg, 481****rsburg, 70****rsburg, 195****rsburg, 200****rsburg, 761****rsburg, 50 bris.****rsburg, 40 cks.****rsburg, 25 bls.****rsburg, 1 cs.****rsburg, 7 c.****rsburg, 41****rsburg, 35****rsburg, 87****rsburg, 200****rsburg, 41****rsburg, 68****rsburg, 995****rsburg, 297****rsburg, 458****rsburg, 174****rsburg, 255****rsburg, 8****rsburg, 12 t.****rsburg, 318 bgs.****rsburg, 1 ble.****rsburg, 200 cks. 6 cs.****rsburg, 8 2 2 pkgs.****rsburg, 1 130 dms.****rsburg, 572 117 296****rsburg, 3 128****rsburg, 16 10 7****rsburg, 6 60****rsburg, 2 1****rsburg, 72 60 pkgs. 6****rsburg, 26****rsburg, 137 34 pks. 20****rsburg, 45****rsburg, 1 cs. 5****rsburg, 106 2 25****rsburg, 34 7****rsburg, 59 20****rsburg, 97 1****rsburg, 401 t.****rsburg, 75 bgs****rsburg, 1 ck.****Dip—****chee, 300 dms.****Slag—**

Christiania, 1,015 bgs	
Gothenburg, 500	

Tallow—

Amsterdam, 10 cks.	
Rotterdam, 17	
Wyburg, 2	
Wasa, 103	

Tar—

Antwerp, 7 cks.	
Amsterdam, 22	
Abo, 10	
Bremen, 64	
Christiania, 10	
Gothenburg, 200	
Helsingfors, 25	
Hamburg, 12	
Rotterdam, 2	
Wasa, 130	

Treacle—

Drontheim, 20 cks.	
--------------------	--

Turpentine—

Bombay, 60 cks.	
Helsingfors, 10	

Varnish—

Amsterdam, 17 cks.	
Bombay, 75	
Bremen, 3	
Danzig, 1 cs.	
Gothenburg, 6	
Rotterdam, 1	

Zinc Chlorate—

Amsterdam, 20 cks.	
--------------------	--

GLASGOW.*Week ending June 6th.***Albumen—**

U.S.A., 40	
------------	--

Alkali—

Constantinople, 449	
---------------------	--

Ammonium Chloride—

Italy, 4 t. 9 c.	
------------------	--

Ammonium Sulphate—

Malaga, 102 t. 15 3/4 c.	
U.S.A., 66 7 3/4	

Bleaching Powder—

Valparaiso, 1 t. 5 1/2 c.	
---------------------------	--

Borax—

Amsterdam, 10 c.	
Christiania, 10 c.	

Carbolic Acid—

Rotterdam, 443	
----------------	--

Caustic Soda—

New York, 4200	
----------------	--

Coal Products—

Aniline, 457	
Aniline Colours, 434	
U.S.A., 455	
Creosote, 455	
Creosote Oil, 4,305	
France, 465	
Naphtha, 19 t.	
Naphthaline, 440	
France, 4370	
Italy, 648	
Turkey, 77	
Santander, 300 t.	
Danzig, 109 10 c.	
Canada, 605	
Dieppe, 605	
Tar, 425	
Calcutta, 32	
Madras, 33	
Danzig, 700 bris.	
Canada, 100	
Stockholm, 100	
Tar Oil, 59 t. 3 c.	
Danzig, 462	
Hamburg, 462	

Creosote**Creosote Oil****France****Naphtha****France****Dieppe****Naphthaline****France****Pitch****France****Italy****Turkey****Santander****Danzig****Canada****Dieppe****Tar****Calcutta****Madras****Danzig****Canada****Stockholm****Tar Oil****Danzig****Hamburg****Dyestuffs—****Alizarine****Lisbon****Extracts****New Brunswick****U.S.A.****Logwood****Lisbon****Oporto****Sumac Extract****Barcelona****Dyestuffs (otherwise undescribed)****Lisbon****Glucose—**

Canada, 2 t.	
Pt. Elizabeth, 421	

Iron Liquor—

Rotterdam, 2 t. 11 c.	
-----------------------	--

Lamp Black—

Canada, 428	
-------------	--

Linseed Oil—

Singapore, 1 t. 16 1/2 c.	
Calcutta, 1 3 1/4	
Canada, 34 12	
Cape Town, 1 10 1/4	
Malta, 1 4 1/2	

Litharge—

Johannesburg, 421	
-------------------	--

Paint—

Hong Kong, 417. 108.	
Singapore, 4158	
Algoa Bay, 53	
Bombay, 22	
Delagoa Bay, 38	
Havana, 121	
Natal, 18	
U.S.A., 25	

Painters' Colours—

Natal, 480	
Calcutta, 165	
Cape Town, 77	
Malta, 130	

Paraffin Wax—

Barcelona, 421	
Bordeaux, 120	
Turkey, 200	
Christiania, 4 t.	
Riga, 10 3 1/2 c.	
Cape Town, 23	
Fiume, 349	
Trieste, 198	

Potash Salts—

Delagoa Bay, 4346	
-------------------	--

Potassium Bichromate—

Turkey, 4249	
U.S.A., 474	
Stockholm, 16 c.	

Potassium Prussiate—

Barcelona, 4365	
Paris, 4343. 158.	

Rosin Oil—

Amsterdam, 430	
Rotterdam, 35	

Soap—

Algoa Bay, 14 3/4 c.	
----------------------	--

Sodium Bichromate—

U.S.A., 4255	
--------------	--

Starch—

Barcelona, 443. 158	
---------------------	--

Sulphuric Acid—

Madras, 430	
-------------	--

Tallow—

Delagoa Bay, 17 c.	
--------------------	--

Treacle—

Gothenburg, 4261	
Christiania, 11 t. 10 c.	
Stockholm, 14	

White Lead—

Oporto, 4161	
Amsterdam, 5	
Rotterdam, 11	
Pt. Elizabeth, 29	
Calcutta, 85	
Cape Town, 58	
E. London, 38	
Stockholm, 3 t.	

TYNE.*Week ending June 1st.***Alkali—**

St. Petersburg, 14 t. 5 c.	
Hamburg, 5 16	
Rotterdam, 3 6	
Amsterdam, 15 11	

Ammonium Carbonate—

Barcelona, 10 c.	
------------------	--

Arsenic—

Barcelona, 1 t. 16 c.	
-----------------------	--

Barium—

Rouen, 15 t. 4 c.	
-------------------	--

Barytes—

Hamburg, 100 t.	
Rouen, 24	

Bleaching Powder—

Lisbon, 15 t.	
Konigsberg, 37 17 c.	
Antwerp, 87 10	
St. Petersburg, 64 14	
Hamburg, 23 2	
Christiania, 9 9	
Bilbao, 10 3	

Aalborg, 10 2**Venice, 1 12****Rotterdam, 6 12****Drontheim, 10 1****Copenhagen, 36 11****Riga, 9 19****Amsterdam, 34 8****Carbolic Acid—**

Rotterdam, 8 t. 4 c.	
----------------------	--

Caustic Soda—

Antwerp, 11 t.	
St. Petersburg, 17 8 c.	
Hamburg, 13 1	
Wasa, 100 2	
Aalborg, 1 3	
Aarhus, 1 4	
Venice, 31 18	
Barcelona, 61 7	
Copenhagen, 10 3	
Amsterdam, 5	

Chemicals (otherwise undescribed)

Rotterdam, 3 4 c.	
-------------------	--

Copperas—

Antwerp, 10 c.	
Oporto, 1 t. 14	

Litharge—

Antwerp, 2 t. 17 c.	
Rotterdam, 11	
Amsterdam, 3 7	

Magnesia—

Barcelona, 5 t. 12 c.	
Copenhagen, 2	

Manganese—

Bilbao, 50 t.	
---------------	--

Ochre—

Christiania, 4 t. 16 c.	
-------------------------	--

Paint—

Cagliari, 2 c.	
Stavanger, 7	
Riga, 10	

Soda—

PRICES CURRENT.

WEDNESDAY, JUNE 25TH, 1895.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.B. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

Acids:—		£	s	d
Acetic, 25 % and 40 %	per cwt.	6/3	9/3	
Glacial	per cwt.	40/-		
Arsenic S.G., 2000	per lb.	0	15	0
Fluoric	per lb.	0	0	3 1/2
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0	10
(Cylinder), 30° Tw.	per lb.	0	3	0
Nitric 80° Tw.	per lb.	0	0	1 1/2
Nitrous	per lb.	0	0	1 1/2
Oxalic	per lb.	0	0	3 1/2
Phosphoric, 1750	per lb.	0	1	1
Picric	per lb.	0	0	10
Sulphuric (fuming 50 %)	per ton	15	10	0
(monohydrate)	per lb.	5	10	0
(Pyrites, 188°)	per lb.	5	0	0
(fine from arsenic, 145°)	per lb.	1	8	0
Sulphurous (solution) S.G. 1025	per lb.	3	0	0
Tannic (pure)	per lb.	0	1	0
Tartaric	per lb.	0	0	10 1/2
Arsenic, white powdered	per ton	14	17	6
Alum (loose lump)	per ton	4	12	6
Alumina Sulphate (pure)	per ton	4	12	6
Aluminoferric	per lb.	2	7	6
Aluminium	per lb.	0	2	10
Ammonia, Anhydrous	per lb.	0	1	3
SSC=28° B.	per lb.	0	0	3
=24° B.	per lb.	0	0	2 1/2
Carbonate	per lb.	0	0	3 1/2
Muriate	per ton	21	10	0
(sal-ammoniac) 1st & 2nd	per cwt.	39/-	37/-	
Nitrate	per ton	40	0	0
Phosphate	per lb.	0	0	8 1/2
Sulphate (grey) London	per ton	9	17	6
(grey) Hull	per ton	9	15	0
Aniline Oil (pure)	per lb.	0	0	5 1/2
Aniline Salt	per lb.	0	0	4 1/2
Antimony	per ton	32	5	0
(tartar emetic)	per lb.	0	0	7
(golden sulphide)	per lb.	0	0	10
Barium Chloride	per ton	6	7	0
Carbonate (native)	per lb.	3	5	0
Sulphate (native levigated)	per lb.	45/-	10/75/-	
Bleaching Powder, 35 %	per lb.	7	0	0
Liquor, 7 %	per lb.	3	10	0
Bisulphide of Carbon	per lb.	13	0	0
Chromium Acetate (crystal)	per lb.	0	0	6
Calcium Chloride	per ton	2	2	6
China Clay (at Runcorn) in bulk	per ton	15/-	10/30/-	
Coal Tar Products and Dyes:—				
Alizarine (artificial) 20 %	per lb.	0	0	8
Magenta	per lb.	0	3	9
Anthracene, 30 % A, f.o.b. London	per unit per cwt.	0	1	0 1/2
Benzol, 90 % nominal	per gallon	0	1	0
50/90	per lb.	0	0	11
Carbolic Acid (crystallised 40°)	per lb.	0	0	6 1/2
(crude 60°)	per gallon	0	1	7 1/2
Creosote (ordinary)	per lb.	0	0	1 1/2
(filtered for Lucigen light)	per lb.	0	0	2
Crude Naphtha 70 % @ 120° C.	per ton	0	0	5 1/2
Grease Oils, 22° Tw.	per ton	1	10	0
Pitch, f.o.b. Liverpool or Garston	per lb.	1	13	0
Solvent Naphtha, 90 % at 160°	per gallon	0	1	1
Lucigen and Wells Oils	per lb.	0	0	2 1/2
Copper	per ton	42	12	6
Sulphate	per lb.	15	15	0
Oxide (copper scales)	per lb.	41	10	0
Glycerine (crude)	per lb.	16	10	0
(distilled S.G. 1250)	per lb.	42	10	0
Iodine	per oz.	0	0	9
Iron Sulphate (copperas)	per ton	1	5	0
Sulphide (antimony slag)	per lb.	2	0	0
oil (sheet) for cash	per lb.	11	15	0
Litharge Flake (ex ship)	per lb.	13	5	0
Acetate (white)	per lb.	24	10	0
brown	per lb.	14	10	0
Carbonate (white lead) pure	per lb.	16	0	0
Nitrate	per lb.	18	15	0
Lime, Acetate (brown)	per ton	5	12	6
(grey)	per ton	8	10	0
Magnesium (ribbon and wire)	per oz.	0	2	1
Chloride (ex ship)	per ton	2	7	5
Carbonate	per cwt.	1	17	6
Hydrate	per ton	17	0	0
Sulphate (Epsom Salts)	per ton	3	0	0
Manganese, Sulphate	per ton	17	0	0
Borate	per cwt.	2	15	0
Ore, 70 %	per ton	4	5	0
Methylated Spirit, 61° O.P.	per gallon	0	1	10
Naphtha (Wood), Solvent	per lb.	0	3	0
Miscible, 60° O.P.	per lb.	0	3	0
Oils:—				
Cotton-seed	per ton	18	10	0
Linseed	per ton	22	15	0
Petroleum, American	per gallon	0	0	6 1/2
Stearine	per ton	25	10	0
Phosphorus (yellow)	per lb.	0	2	2
(red)	per lb.	0	2	8
Potassium (metal)	per oz.	0	3	7
Bichromate	per lb.	0	0	4 1/2
Carbonate, 90 % (ex ship)	per ton	16	15	0
Chlorate	per lb.	0	0	3
Cyanide, 98 %	per lb.	0	1	6
Hydrate (Caustic Potash) 80/85 %	per ton	21	5	0
(Caustic Potash) 75/80 %	per ton	19	15	0
(Caustic Potash) 70/75 %	per ton	19	10	0
Nitrate (refined)	per cwt.	1	1	6
Permanganate	per cwt.	2	17	6
Prussiate Yellow	per lb.	0	0	7 1/2
Sulphate, 90 % (ex ship)	per ton	9	15	0
Muriate, 80 % (do.)	per ton	8	10	0
Silver (metal)	per oz.	0	2	6 1/2
Nitrate	per lb.	0	2	0
Sodium (metal)	per lb.	0	2	11
Carb. (refined Soda-ash) 48 %	per ton	4	15	0
(Caustic Soda-ash) 48 %	per lb.	3	17	6
(Carb. Soda-ash) 48 %	per lb.	3	15	0
(Alkali) 58 %	per lb.	3	7	6
(Soda Crystals)	per lb.	2	2	6
Acetate (ex-ship)	per lb.	14	0	0
Arseniate, 45 %	per lb.	11	0	0
Chlorate	per lb.	0	0	6 1/2
Borate (Borax)	per ton	18	0	0
Bichromate	per lb.	0	0	1 1/2
Hydrate (77 % Caustic Soda) (f.o.b.) net per ton	per ton	9	7	0
(74 % Caustic Soda)	per ton	8	7	6
(70 % Caustic Soda)	per ton	7	10	0
(60 % Caustic Soda)	per ton	6	10	0
(60 % Caustic Soda, cream) (f.o.b.)	per ton	6	7	6
Bicarbonate	per lb.	6	10	0
Hyposulphite	per lb.	5	20	0
Manganate, 30 %	per lb.	16	0	0
Nitrate (95 %) ex-ship Liverpool	per cwt.	0	8	1 1/2
Nitrite, 98 %	per ton	29	0	0
Phosphate	per lb.	14	10	0
Silicate (glass)	per ton	4	10	0
(liquid, 100° Tw.)	per lb.	3	10	0
Stannate, 40 %	per cwt.	3	2	9
Sulphate (Salt-cake)	per ton	0	17	6
(Glauber's Salts)	per lb.	1	5	0
Sulphide	per lb.	8	0	0
Sulphite	per lb.	5	5	0
Strontium Hydrate, 100 %	per lb.	5	10	0
Sulphocyanide Ammonium, 95 %	per lb.	0	0	6 1/2
Barium, 95 %	per lb.	0	0	6 1/2
Potassium	per lb.	0	0	2
Sulphur (Flowers)	per ton	5	15	0
(Roll Brimstone)	per ton	5	0	0
Brimstone: Best Quality	per ton	3	12	6
Superphosphate of Lime (26 %)	per ton	2	7	6
Tallow	per lb.	23	10	0
Tin Crystals	per lb.	0	0	1 1/2
English Ingots	per ton	66	0	0
Zinc (Spelter)	per lb.	14	12	6
Chloride (solution, 100° Tw.)	per lb.	5	7	6

THE CHEMICAL TRADE JOURNAL

AND
OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

422.

SATURDAY, JUNE 22, 1895.

Vol. XVI.

Contents.

	PAGE		PAGE
ics	397	Report on Manure Material.....	404
essed Gas Cylinder In.....	398	Liverpool Mineral Market	404
Companies	398	Miscellaneous Chemical Market ..	404
Acetylene.....	399	Tyne Chemical Report.....	404
oranda	400	The Metal Markets	404
ers' Column	401	Liverpool Oil and Colour Market..	404
Exports for May	401	Hull Paint, Oil, and Colour Report	405
Self.....	402	West of Scotland Chemicals	405
ry Jottings	402	New Companies.....	405
Production of the	402	The Patent List	405
.....	402	Gazette Notices.....	405
.....	403	Imports	406
monia Products	404	Exports	408
		Prices Current.....	412

Notices.

Communications for the *Chemical Trade Journal* should be sent to the Editor, and Cheques and Post Office Orders made payable to—

DAVIS BROS., 32, Blackfriars Street, MANCHESTER.

Our Registered Telegraphic Address is—

"Expert, Manchester."

Terms of Subscription, commencing at any date, to the *Trade Journal*,—payable in advance,—including postage of the world, are as follows:—

Monthly (52 numbers)	12s. 6d.
Yearly (26 numbers)	6s. 6d.
Quarterly (13 numbers)	3s. 6d.

Subscribers will oblige by making their remittances for subscriptions by Post Office Order, crossed and payable to "Davis Bros."

Contributors are invited to forward items of intelligence, or cuttings from newspapers, of interest to the trades concerned.

Communications for the Editor, if intended for insertion in the next week's issue, should reach the office not later than **Tuesday**.

Reports, and correspondence on all matters of interest to the chemical and allied industries, home and foreign, are solicited. Contributors should condense their matter as much as possible, use one side only of the paper, and in all cases give their full addresses, not necessarily for publication. Sketches should be sent on separate sheets.

Advertisements.

Advertisements of Situations Vacant, Premises on Sale or To be Let, and Wants, and Specific Articles for Sale by Private Contract are charged in the *Chemical Trade Journal* at the following rates:—

10 Word and under.....	2s. 6d. per insertion
Each additional 10 words	6s. 6d. "

Advertisements, Announcements in the Directory Columns, and all Advertisements, are charged at the Tariff rates, which will be forwarded on request.

Advertisements intended for insertion in the current week's issue should reach the office by **Thursday morning at the latest.**

CURRENT TOPICS.

AN INSTRUCTIVE CASE.

A RATHER singular case has been settled in the Court of Appeal this week which is likely to have a bearing on the affairs of many engaged in the chemical industries. The case turned upon an attempt to seek a remedy for obstruction of light and air by the erection of a building. The defendant, in raising certain existing buildings by sixteen feet, obstructed the passage of air to his neighbour's premises, which, owing to objectionable surroundings existing on the same, were thus subjected to noxious smells, formerly diluted or carried away by the circulation of the atmosphere. At the Assizes judgment was given in favour of the plaintiff on the ground that the obstruction of the air caused a nuisance, an injunction being granted ordering the defendant to take down the buildings erected.

On appeal this decision has, however, been reversed, the grounds on which the reversal is based being important; Lords Justices Lindley, Lopes, and Kay all virtually arguing on the same points, and expressing the same opinion upon each.

The chief points of their arguments are that there is no proof of any agreement binding the defendant not to build, and, if there were, a mere claim to an undefined passage of air is too vague. By the rights of common law, everyone has a right to enjoy pure air, free from bad smells, and in consequence there is a remedy against a man who vitiates the air which subsequently passes on to his neighbour; nevertheless, no one is entitled to impose an obligation upon a neighbour owing to want of proper ventilation on his own premises. Thus in this case the nuisance existed on the plaintiff's premises, though it was minimised by the constant passage of air. By impeding the latter the defendant, however, did not create a nuisance; he only made that which already existed more pronounced. So that to diminish a flow of air is not actionable as a nuisance, in the absence of some specific grant or agreement. Thus if a chemical or manure works becomes obnoxious owing to an alteration in its surroundings, generally speaking there is no remedy against the indirect cause of the nuisance, it being incumbent upon the owner of the works to render them innocuous or to effect by artificial ventilation what was originally accomplished by natural agencies.

THE SCOTCH OIL INDUSTRY.

Sir James King, as chairman of Young's Paraffin Light Co., in addressing the shareholders of this company this week, gave a very instructive insight into the feelings which prevail as to the prospects of this industry. A full account of the proceedings is given elsewhere in this issue, but there are one or two points to which we should like to refer more particularly. The general feeling is evidently that better things are in store for the industry, and we are sure no one would wish otherwise. There, however, appears to be one weak

strife of coal miners, involving an extra cost of fuel for our the extent of about £12,000. It is, perhaps, not unsatisfactory that, notwithstanding these adverse circumstances, our show a profit of £20,620, after charging to revenue certain improvements carried out at the works, and after spending in repairs, replacements, etc., and thus upholding the works, mines in a thoroughly efficient condition. To this net profit of there falls to be added £2,042, brought forward from the year, and to be deducted £17,317, paid as interest on s, thus leaving £5,345. Of this amount we propose to apply a reduction of mineral leases suspense account, and to carry £2,345, to next year's account. While I have referred to our in the past, I think we may expect better results in the year ent. The present position of the mineral oil industry in has been greatly strengthened by recent events, and it is e to expect for it a period of prosperity. An advance of prices, liquid and solid paraffin products, has been established, came too late to exert any perceptible influence on the last year. Several causes are contributing to this result. In lace, a sealed agreement, binding all parties for three years, entered into between the Standard Oil Company of America refining companies in Scotland, whereby a moderate but sub-crease has taken place in the price of paraffin scale and The advance was abundantly justified both by the low prices y current and by the statistics of solid paraffin. The stock in and is unusually small, and the revised prices are still y low to encourage a large consumption. In the next place, of burning oil has been advanced twopence per gallon, and products, such as naphtha, gas oil, and heavy oil, are partic-ough in a less degree. The advance of price came from the producers, who have found that the remarkably low rates of o years have been followed by an extension of consumption as to outstrip the current production, and gradually and to trench on the gigantic reserves of oil held in America. t advance in the States in crude oil was naturally followed portant rise in the selling price of petroleum; indeed, the crude petroleum, which in 1892 was as low as 55 cents, per almost trebled in amount. This advance is perhaps due in eculation; but the best security against an early return of the epression is to be found in the greatly diminished stocks of 1. This will be best illustrated by the following figures in to oil stocks both in Pennsylvania and Ohio, the two great f supply in America. In Pennsylvania the stock of crude a at its highest reached 39 millions of barrels; this time last as 10½ millions; to day it is 4½ millions; so that the latterly has been very rapid. In Ohio the stock is as large as n at any former period, being 20 millions of barrels; but it e explained that Ohio crude only contains about one-third of ng oil which is contained in Pennsylvanian crude. It has been that "sweet are the uses of adversity," and the hard times hich we have been passing have been met with determination, and skill, resulting in increased percentages and improvements. As an illustration, I may mention that, comparing the he increased percentages and improvements for last year with the year ended in 1891, when the company earned a profit of they amount to £34,000, and, but for the ill-advised coal rike, the value would have been £46,000. Our experience vements at the works is that once obtained they remain per- and we are therefore in a very favourable position for reaping advantage of any enhancement in the prices of products. improvements, by no means unimportant, are in process of ried out at the works in the current year, but these will be entirely out of revenue. The only capital expenditure pro- be incurred is the sum of £8,000, in connection with our perations. The chief item in this proposed outlay is for a new and railway on the Hopetoun estate. Hitherto the shale worked on e has been by mines, which have been in operation many years, orkings are now so far from the entrance that a vertical shaft has necessary. The sinking of this shaft will enable the shale to cheaply worked, and largely increase the output. The proposed are is thus not only necessary, but will be highly profitable. last annual meeting I referred, with regret, to the lamented Mr. J. Heywood Collins, which had taken place only 48 ore. This is the fitting opportunity for appointing a successor and, at the same time, we think it wise to increase the number oard by another additional member. We feel sure that the hich we submit to your consideration will carry the confidence of areholder. Both Mr. Mason and Mr. Watson enjoy the personal reputation among the citizens of Glasgow, and have e business experience. In the case of Mr. Mason we are e enough to secure, in addition, a practical knowledge both of and machinery, which cannot fail to be valuable in the ns of the company. ettigrew seconded the motion.

Mr. John Wilson asked whether the increase in Russian petroleum did not make up for the decrease in American, and whether they were not again likely to be cornered.

The Chairman said he could not tell, but so far as information had reached the directors the very low prices of the Russian oil had been telling unfavourably on the producers, and not long ago there were numerous failures among them. While nothing definite had been arranged between the Americans and the Russians so far as they were aware, it seemed not unlikely that some such arrangement might be made to the advantage of both large producers.

The motion was then put to the meeting and adopted.

DIVIDEND.

The New Nitrate Syndicate declares an interim dividend of four shillings per share.

THE COST OF ACETYLENE.

IN a recent paper Prof. V. B. Lewes gives the following information about the cost of acetylene and its possibilities:—The future of acetylene is to be found in its combustion unmixd with other gases for the development of light, and there is no doubt that its future in this direction is a very great one. The ease of its formation from the carbide and simplicity of the automatic apparatus necessary for its continuous formation will undoubtedly offer a very great scope for country-house illumination; and for this purpose there is no doubt that, even with the manufacture of the carbide in its infancy, it can be made at a price which will compare very favourably with the illumination obtained from coal gas. For all purposes where portable illumination is required, acetylene will be of the greatest possible value, and the illumination of railway carriages and tramcars offers a wide field for utilizing this magnificent light, whilst in more particular directions it will prove itself of great value for lighthouses and buoys, for which its ease of compression into the liquid form renders it especially well adapted, as very large volumes can in this way be stored in very small space.

No description of acetylene and its production from calcic carbide would be considered at all satisfactory if I did not say something as to the cost of its production, a subject which I must confess I should have much preferred to have left alone until figures which could be absolutely guaranteed were available. The data as to cost which have been from time to time supplied from America vary in the most extraordinary way and between extremes which are both equally ridiculous; and the readers of gas literature will have noticed that even as late as last month in a paper read before the Franklin Institute, it was stated that there was a probability, or at any rate a possibility, of making carbide at about £1. a ton, but this appears to me an absolute impossibility, even with the cheapest of cheap water power to generate electricity, and we shall have to look nearer home for data as to the question of cost, if we are to form any idea on this point.

I have information, which I believe to be reliable, to the effect that in Germany the carbide is being made at 170 marks per ton, or practically £8 10s., and experiments made in England point to the possibility of making it in bulk at about £9. 10s. a ton. The figures are strengthened by the consideration that the Swiss Aluminium Company are selling it, packed in hermetically sealed tins, at 6d. per kilogramme, which means £25. a ton, and it is manifest that this could not be done if the cost of production was not above one-third of the selling price. Looking at these facts, I think it will be safe to say that the cost of producing it will be between £8. and £12. per ton, and the selling price will be between £10 and £14; and if this be so, it will, light for light, be a cheaper illuminant than coal gas.

A ton of carbide generates 11,000 cubic feet of acetylene, and as this is done locally where the acetylene has to be consumed, the charge for distribution becomes excessively small. The gas develops 15 times more light than 16-candle coal gas; and if, therefore, it costs 15 times as much at the burner it would be equal in illuminating value to coal gas; and if the carbide cost £19. to £20. per ton delivered, it would only bring the cost, per cubic foot, to the same as 16-candle coal gas at 2s. 6d. per thousand cubic feet, and it is for this reason that I think acetylene has a brilliant future before it.

One of the first things that strikes one on looking at the acetylene flame is the intensity of the light emitted, and after having looked at the flame for a few minutes, one feels that such local intensity cannot be good for the optic nerves. I think everyone will agree with me that, given illuminants of such high intensity as acetylene and the modern forms of incandescent gas burners, it is necessary to find methods for neutralizing the irritating effect of these high power lights on our visual organs, and, personally, I think the introduction of the holophane globes, which give a perfect distribution and diffusion of light, and at the same time increase it very considerably for all angles below the horizontal mark, is a very important advance in domestic lighting.

Official Memoranda.

(From the Board of Trade Journal.)

TARIFF OF LAURENCO.

Following is a special abstract of the duties charged on imports of the above-named Marques.

ARTICLES.		DUTY.
		s. d.
and Lime.....	per kilog *	0 4
	ad val.	5 per cent.
Powder	per kilog	0 6½
pared	" "	0 0½
and Petroleum.....	" "	0 1¼
	" "	0 1¼
(kind).....	" litre †	0 1½
Coal Tar.....	" kilog	0 2¼
	ad val.	5 per cent.

* equals 2½ lbs. avoird.

† equals 1·76 pints.

PETROLEUM AND ASPHALT IN EASTERN EUROPE AND ASIA.

Petroleum of Galicia has been worked for at least 35 years. The systematic development of this industry took place in the district. In 1861 the first well, 14 metres deep, supplied 100 lbs. of oil per hour. In 1883 this district supplied per day 1,500 metres long, and 1,500 metres broad.

In places a reddish oil is found, which can be burned in ordinary lamps. The oil of the bored wells is very different from the surface oil, which comes from shallow wells, is sometimes 2000.

In Galicia produces a certain amount of ozokerit, which is found to be a species of petroleum in a state of high ebullition. The centre of the mining industry of ozokerit is Boryslaw, in a mountainous region on the northern slope of the Carpathians, above the sea. At Truskowicz there is a deposit of native ozokerit, which is a clayey schist, ozokerit and petroleum. The ozokerit presents itself under the form of veins of variable thickness, from several millimetres to others several decimetres thick; the petroleum, which forms the richest portion of the deposit, occupies about 21 hectares, but a less productive zone extends the total to about 60 hectares.

Petroleum lands of Roumania constitute the great hope of the petroleum industry, whether we regard the extension of the ground worked, or the discovery of new petroliferous regions. In the neighbourhood of Okna, on the further side of the eastern Carpathians, in the valley of Trotush, an affluent of the Sereth, some 100 metres above the sea, is a deposit of petroleum. In this deposit, petroleum is found in considerable quantities. At opposite Okna, ozokerit has been found.

On the eastern slope of the Grochezi and Hirka, in which petroleum is found at a depth of 100 metres.

In the Moniesti district, north of Okna, that the most concentrated workings of mineral oil are concentrated. The petroleum here, the number of a hundred, are concentrated to the north of the district, the ground worked may cover a circular surface of from 15 to 20 metres in diameter.

Petroleum of Teskani is, beyond contradiction, the purest in the district, its composition and density approaching that of the purest.

It weighs only from 0·76 grms. to 0·79 grms., whilst that of the district weighs from 0·84 grms. to 0·87 grms., as compared with the purest.

Progress along the eastern slope of the Carpathians, to the north of Teskani, we meet at Modreni with new beds of worked petroleum. The petroleum is here obtained from some thirty metres depth of which varies from 35 to 45 metres. The Modreni is the best which Wallachia produces, and can bear comparison with the most accredited yield of Pennsylvania.

It is a commune situated to the north of Busco, and is one of the best of Wallachia which, after the district of Ploiesti, yields the greatest quantity of petroleum, but of a very poor quality, the oils being charged with tar.

In the petroleum wells, to the number of a hundred, and in some, are bored in the clay. It is the same at Baikoi and there the same salt-bearing clay occurs, with beds below of solid gypsum.

To the north of Matitza, the petroliferous clays of Poczestza considered as the cradle of the petroleum industry of Roumania.

Finally, beds of petroleum are met with at Campina, 60 kms. north of Bucharest, on the high road to Brassó (Cronstadt).

The basin of Selenitza, in Albania, includes a bed of solid bitumen which is in some places three metres thick. This bitumen is, according to Coquand, petroleum which has reached the extreme limit of exhaustion, reduced into a solid substance, incapable of spontaneous decomposition, and of the generation of new secondary products. Under analysis, the maltha of Selenitza yields the following results: Oil of petroleum, 43 per cent., coal that can be turned into coke 10 per cent., residue, 14 per cent.

In passing from the camp at Selenitza to the Vojutza, hills which contain deposits of bitumen, are met with. The plain which separates the mountainous region from the river is sprinkled with fragments of bitumen which the water has dragged down with it, some of which, the great floods, is carried to the shores of the Adriatic. The abundance of this debris shows how rich the deposits must be from which they come, and recalls to a certain extent the fragments of bitumen which the Black Sea throws up upon its shores.

It is on the banks of the Vojutza, on a level with the blue clays, the remarkable phenomena of the air volcanoes make their appearance. The more majestic of two that have been examined was placed above a bed of gravel, in the form of a very flattened cone, surmounted by a regular crater of more than a metre in diameter, which was filled with a liquid and transparent water. At intermittent periods, varying from 50 to 55 seconds, the water in the crater was violently shaken by the escape of gas, which broke the service in the form of great bubbles. Each emission, which overflowed the walls of the crater, ran down over the sides of the cone, the thickness and circumference of which were thus being steadily increased, and then was lost in the waters of a bay formed by the Vojutza.

The old cast-up matter, which lies at a short distance from the crater, becomes as thick as printers' ink, and is able to bear the weight of objects upon it; a man's foot would gradually sink in it if it were left there long enough.

In the island of Zante, the petroleum is found in clays lying on a marshy ground, and attempts have been made to sound the deep beds. In one case they went down 150 metres, and tapped a petroleum bed at 48 metres, producing at once about half a barrel. Another boring went down 150 metres without getting beyond blue clay and without any result; a third at 21 metres supplied 100 gallons within seven hours, and then became absolutely sterile.

The mineral oils of Chiéri are very heavy and of inferior quality which is easily to be accounted for. The disengagement of inflammable gas for centuries has deprived them of their lighter qualities. It is reasonable to conjecture that this spontaneous distillation will gradually lead to their impoverishment and complete exhaustion, when they will be finally transformed into solid bitumen, as has already happened in the beds of the Dead Sea and of Selenitza.

The asphalt beds of Russia are found to the west of the great river of the Volga, on the right bank, a little above the town of Sizarau, along an extent of 20 kilometres. There are known three beds of asphalt, the lowest of which is the best; this contains from 24 to 30 per cent. of bitumen, the point of fusion of which is much higher than that of the French and Swiss bitumens.

The asphalt diggings have been worked since 1874. They are worked in quarries open to the sky, and they serve to manufacture asphalt putty in three factories, the most important of which is in the town of Sizarau. The free bitumen necessary to this manufacture is extracted from bituminous sandstone in the district of Sizarau, 50 km. to the east of the beds of asphalt.

The bitumen commonly called Judean bitumen exists in the calcareous cretaceous rocks of the Valley of the Jordan and of the Dead Sea. In this region, in particular, it is tolerably abundant since it leads to an oozing or trickling in a glutinous form, which hardens into a solid resinous mass. There are also beds of asphalt in Hungary, in the county of Bihar, at Felsö-Derna, Mész-Telek, Tataros; the works are carried on by two joint-stock companies employing about 1,230 workmen.

THE SUGAR INDUSTRY IN AUSTRIA-HUNGARY.

The first manufactory of beetroot sugar was established in 1833 at Dobrowitz in Bohemia. In 1863-64 the Empire possessed 1,040,000 quintals of sugar extracted from 8,103,000 quintals of beetroots. In 1873-74 the number was 1,375,000 quintals of beetroots. In 1873-74 the number was 1,375,000 quintals of beetroots. Since then the number of establishments has diminished, but the production continues to increase. In 1883-84 there were 230 establishments; 41,845,000 quintals of beetroots in use, giving 4,700,000 quintals of sugar. In 1887 the number of manufactories sank to 203; since then there has been a steady increase and in 1893-94, 236 manufactories have produced 8,300,000 quintals.

from 65,000,000 quintals of beetroots. In the same year y produced 13,800,000 quintals of sugar. The value of the of sugar from Austro-Hungary was 97,000,000 florins in 1893-94 st 74,000,000 in 1892-93, and 83,000,000 in 1891-92.

is forced production, stimulated by bounties, must be attributed ous crises through which the sugar industry has passed. A fresh arising from the same cause. By increasing the bounties to sugar sturers, the production has been much increased, but the con- n cannot be developed in the same degree, as the duties are y in proportion to the value of the article. A tax, which at one presented 30 per cent. of the sale price, may now be set down r cent. of the same. In Belgium the consumption duty is 45 or raw sugar worth only 22 fances. In Austro-Hungary the the tax is 11 florins per 100 kilogs. for beetroot and other raw whatever may be their degree of finish. In Hungary there is, ion to the tax on the production, a consumption tax of 6 florins atal.

aw of the 20th June, 1888, grants, by way of export bounty, for 50 kilogs. (220lbs.) :—

in 50, if the degree of polarisation is from 88 to 93 per cent.

in 60, if the degree of polarisation is from 93 to 99½ per.

ins 30, if the degree of polarisation is above 99½ per cent. he total amount of bounties is limited, it cannot exceed 5 of florins.

TRANSPORT OF MINERAL OIL FROM BAKU.

Stevens, her Majesty's Consul at Batoum, in a report to the Office, states that, according to information from St. Peters- ie reduced freight of 9 copecks per pood that has latterly been for the transport of light mineral oils from Baku to Batoum be increased to 14 copecks per pood.

ly a still further augmentation of the tariff is to take place, would appear the freight will be restored to the former rate of cks per pood.

IMPORTATION OF OIL IN BULK INTO CHINA.

mpliance with the request of the Russian Minister, the Chinese ment agrees to establish bonded warehouses where all kerosene by tank steamer shall be deposited and pay no duty until red, when it will be liable to tariff duty.

following is a copy of the regulations which it was proposed to d which were to come into force on the 1st April last :— il tanks can only be established on sites approved of by the local territorial officials.

tanks established with the approval and consent of the local will be licensed as Customs bonded warehouses for oil in bulk ication to the Customs. Such bonding licences will be renew- ually, the fee for first issue being Haikwan taels 250 and for ual renewal Haikwan taels 150; a further fee of Haikwan taels ntly for Customs superintendence, &c., is also to be paid.

il removed from bond will pay import duty before removal. If to local consumption or sent to another treaty port for local ption there, it will have no further duty to pay. If sent inland port it will pay transit dues.

il stored in tanks which have been approved of but not bonded y import duty on entering the tank and coast trade duty on at another port.

these rules apply to tanks and tank oil at the treaty ports generally.

Paper-Makers' Column.

THE ANTI-FLUFF DANDY ROLL.

Dandy Roll and Paper-makers' Engineering Company gave an ing exhibition of their new machinery in London recently. In nufacture of paper out of the raw material, as is well known, it reduced by chemical and mechanical means to a pulp, which is rgely diluted with water, and passed on to a travelling endless f wire. The water is strained through this wire, and leaves a n or web of paper on the surface. Then what is known as a y roll" is made to revolve very lightly on the surface of this thin pulp, which, being in a soft condition, naturally yields, and n impression of the wire or any design that may be attached to ee. This is the ordinary method of water-marking paper, and ing the ordinary dandy roll in paper mills there has hitherto a very serious drawback owing to the accumulation of a quantity in the wire netting of the dandy roll, so that after a few hours g the roll has to be removed and cleaned, thus causing a very rable loss of time and labour. One of the company's new ons is called the "Anti-fluff roll" and, as its name indi-

cates, the difficulty occasioned by the aforesaid accumulations is entirely got rid of. The construction of the ordinary roll is such that the spindle of the roll itself is made to work on bearings and pedestals, but in the new rolls, instead of the shaft of the roll travelling on a pair of "jaws," a hole has been made clean through the journals, and a number of holes drilled along the centre tube, which is now made quite hollow. The tube is connected by means of a rubber with the steam pipe from the cylinders, and by this means a jet of steam is continually kept playing on the roll, thus absolutely preventing any of the accumulations, as mentioned above. By this means it has been found absolutely unnecessary to stop the machine, and when it is considered that at present for cleaning purposes it is necessary to discontinue working for one hour in every three or four the value of the invention to the papermaking trade will be apparent. Another of the inventions of the company worthy of particular notice is the improved movable water marking designs. Hitherto in an average paper mill, it has been found necessary to have as many as 400 or 500, or even 1,000 dandy rolls on hand, in order to meet the demands of the customers who required different water marks on the paper. Considering that these rolls are rather bulky and cost as much as £10. each, it will be seen that this has been quite a large item of expense. But the new invention does away with all this, and in future only a single dandy roll for each machine will be necessary. The invention consists in simply making the designs separate for the rolls and capable of being attached or detached at pleasure, and each small stationer who wishes to have his own water-mark may now become possessed of one at a comparatively small cost. It is expected that the possession of these two patents will be more than sufficient to guarantee the success of the company.

IMPORTS AND EXPORTS FOR MAY.

THE Board of Trade returns are more satisfactory this month. The imports of oils show an increase, and there is an improvement in the value and exports of alkali.

IMPORTS OF FOREIGN AND COLONIAL PRODUCE.

ARTICLES.	Quantities.	
	1894.	1895.
Margarine	Cwt. 88,747	63,094
Copper Ore and Regulus.....	Tons. 10,754	8,066
Pyrites.....	" 49,575	48,752
Tin	Cwt. 64,675	74,465
Alkali	" 8,558	22,126
Brimstone	" 49,052	72,185
Dyes, Coal Tar	£. 46,191	56,378
Saltpetre	Cwt. 15,882	22,302
Petroleum	Gall. 12,026,671	13,554,281
Turpentine	Cwt. 791	10,271
Guano	Tons. 1,343	6,409
Nitrate of Soda	" 14,264	18,934
Paraffin	" 50,760	48,575
Rosin	Cwt. 151,556	111,618
Tallow and Stearine.....	" 117,012	135,782
Oil Seed Cake	Tons. 20,731	27,426
Wood Pulp.....	" 22,615	20,989

EXPORTS OF BRITISH AND IRISH MANUFACTURES.

ARTICLES.	Quantities.	
	1894.	1895.
Alkali	Cwt. 461,062	617,580
Cement	Tons. 48,120	40,572
Coal and Coke	" 2,923,055	3,112,206
Copper, all kinds	Cwt. 77,471	114,704
Iron and Steel	Tons. 288,914	265,663
Chemical Manures	" 20,137	25,787
Oils, seed	" 5,645	5,539
Salt	" 83,518	84,981

CHANGE OF ADDRESS.—We are informed that the West Indies Chemical Works, Ltd., have removed their London offices from Victoria-street, S.W., to 110, Fenchurch-street, E.C., when business will in future be conducted as heretofore.

THE AMERICAN IRON TRADE IMPROVING.—The improvement in the American iron trade is remarkable. Prices are higher, the consumption exceeds the production, contracts are made for months ahead, and this without extensive railway purchases. The leading organ of the iron trades in New York declares that the past week's business was the best known for many years.

Our Book Shelf.

The 31st Annual Report of the Chief Inspector under the "Alkali, &c. Works Act," being his proceedings during the year 1894.

This appears to be the last report of Mr. A. E. Fletcher, the chief inspector, who has held office since the decease of the late Dr. Angus Smith, in 1884, as our readers will doubtless see in another column the appointment of Mr. R. Forbes Carpenter as the new chief inspector. The report before us is a continuation of the valuable work that has been done in former years, and the table given on page 8 of the average amount of acid gases escaping in each district shows that under the existing methods of condensation and repression the practicable limit has been reached. Several prosecutions have been entered into, one in Ireland on account of an excess of acid gases escaping from manure mixing; three—one in Bolton, one in Cork, and the third in Dewsbury—were for non-registration under the Act, while two gasworks seem to have been prosecuted for the offence of obstructing the Inspector in the execution of his duty. The obstruction seems to have been the passing of gas into other channels than those indicated to the Inspector. The report says: "There was a secret pipe buried in the ground, the presence of which was denied, and thus the Inspector was obstructed from examining the effluent gases as was his duty." This being the case, we would like to know why the very large gasworks in the Midlands who were discovered some years ago doing the same thing were not prosecuted also.

The prosecution in Cork is evidently at Works No. 225, but the details given on page 27 do not indicate the justification of a prosecution, and this is the reason why we have so seldom criticised the details given in the District Inspectors' Reports. According to the table on page 27, the outlet from the condenser contained 0.23 grains as SO_2 per cubic foot, while two other works, Nos. 238 and 221, contained 0.32 and 0.30 respectively. Moreover, we have yet to learn that the percentage escaping has become a fixed law, so far as gases other than muriatic acid gas are concerned. If the prosecution was based upon the figures given in the table, then the prosecution was not justified. If the figures given in the table do not show the general condition of the works, then the figures are misleading and of no use. As a matter of fact, the report requires revision, and this no doubt will be undertaken by the new chief inspector. There is no use in accumulating figures which do not fairly represent the average condition of the works, and during the past few years we are afraid that much useless material has been printed. As a rule the information recorded is very interesting to those in the trade, but it should be the duty of the chief inspector to weed out all useless matter and all figures which do not show the true state of affairs. It would be quite possible to go over the whole of the reports from the commencement in 1863, and to show by figures that we have not progressed from that date. Practically we know the contrary, and this is another method of proving the truth of our assertions. We advise all interested to procure the Report, which can be had from Messrs. Eyre and Spottiswoode at the modest price of 5/6d.

Parliamentary Jottings.

BRINE PUMPING.

In the House of Commons last week the minutes of evidence taken before the various Committees on the brine-pumping question were referred to the Committee on the Brine Pumping (Compensation for Subsidence) Provisional Order Bill.

WATER IN BUTTER.

Mr. W. Abraham asked the President of the Local Government Board whether there was a legal standard of water in butter; whether Somerset House had fixed any such standard; and whether he was prepared to issue a circular to local authorities pointing out to them the law in this matter.

Sir W. Foster said the Select Committee on the Adulteration of Food Products had not yet reported. From the evidence before them it appeared that there was no legal standard of water in butter, and therefore Somerset House had not fixed any such standard. When the Committee had reported he hoped the local authorities would be better informed on the matter.

THE ELECTION OF A CHECKWEIGHMAN AT PARR.

On Monday, Mr. Seton-Karr asked the Home Secretary if he could now state the result of the fresh election of a checkweighman at the Adair's Green Colliery, Parr, St. Helens, which he recently directed to be held under the provisions of the Coal Mines Regulation Act, 1887, in consequence of certain alleged interference by the colliery managers.

Mr. Asquith: In answer to a question respecting this case I informed my hon. friend the member for the Ince division of Lancashire that a ballot would be held for the appointment of a checkweigher. That ballot has been held, and I am informed that Henry Pennington has been elected by a majority of 38 votes out of 56.

Mr. Seton-Karr asked the Home Secretary if he was aware that the member for Ince (Mr. Woods) had stated that the election was not conducted according to law, and that the matter would not be in his sight.

Mr. Asquith said some doubt had been expressed as to the election of the checkweighman on the ground that he had not been duly elected. A fresh election was held, with the result he had stated.

Mr. Seton-Karr: Is the right hon. gentleman aware that the second election is in strict accordance with the provisions of the Act?

Mr. Asquith: I have no reason to doubt it.

Mr. Leigh asked if it was not a fact that the nominee of the Miners' Federation did not obtain one vote.

Mr. Asquith: I have not the least idea. I did not know they had a nominee.

THE MINERAL PRODUCTION OF THE U.S.A.

WHILE no statistics of this kind collected from so large a country with as varied industries can be absolutely correct, it is believed that these figures are the most accurate and the fullest that have ever been presented of the mines, quarries, and metallurgical works of the United States. Returns have been received in our department from all the producers, and these have been carefully checked and compared with all available sources of information. The statistics of production of several articles, as published a year ago in Vol. II. of "The Mineral Industry," have been revised by later and more complete data (C.T.J. 381, p. 147). It is the intention to test these statistics accurate and trustworthy; consequently, when errors or omissions are discovered they are corrected in subsequent volumes.

Products.	Customary Measures.	1893. Quantity.	1894. Quantity.
NON-METALLIC.			
Alum.....	Short tons	96,000 ..	72,000 ..
Antimony ore	Short tons	850 ..	1 ..
Asbestos and Talc—			
Asbestos	Short tons	120 ..	3 ..
Fibrous talc	Short tons	36,500 ..	39,000 ..
Talc and soapstone ..	Short tons	20,100 ..	21,000 ..
Brax	Pounds	9,199,000 ..	13,140,500 ..
Cement, natural			
hydraulic	Bbls., 300 lb. ..	7,445,950 ..	7,891,500 ..
Cement, Portland	Bbls., 300 lb. ..	673,989 ..	738,000 ..
Coal, anthracite	Short tons	47,355,387 ..	52,010,000 ..
Coal, bituminous	Short tons	128,826,364 ..	117,950,000 ..
Coke	Short tons	8,939,961 ..	8,495,000 ..
Copper sulphate	Pounds	54,000,000 ..	60,000,000 ..
Graphite	Pounds	882,912 ..	770,000 ..
Lime	Bbls., 200 lb. ..	60,000,000 ..	56,750,000 ..
Petroleum, crude	Bbls., 42 gals. ..	50,349,228 ..	48,527,000 ..
Salt, evaporated	Bbls., 280 lb. ..	9,703,419 ..	9,161,000 ..
Salt, rock	Bbls., 280 lb. ..	1,935,642 ..	2,341,000 ..
Slate, roofing	Squares	803,887 ..	695,000 ..
Slate, other manufac-			
tures	Square feet	4,138,920 ..	5,099,000 ..
Stone limestone (flux) ..	Long tons	3,750,000 ..	3,344,000 ..
Stone, marble	Cubic feet	5,639,681 ..	5,681,000 ..
METALS.			
Aluminium	Pounds	312,000 ..	817,000 ..
Antimony	Short tons	350 ..	1 ..
Copper	Pounds	327,255,788 ..	353,504,000 ..
Gold	Troy ounces ..	1,739,323 ..	1,923,000 ..
Iron, pig	Long tons	7,043,384 ..	6,657,000 ..
Lead, value at New York			
Nickel, fine	Short tons	166,678 ..	180,000 ..
Quicksilver	Pounds	25,893 ..	— ..
Silver, commercial value	Flasks, 76½ lb. ..	30,164 ..	24 ..
Zinc spelter	Troy ounces ..	60,500,000 ..	49,840,000 ..
	Short tons	76,253 ..	74,000 ..

To make a fair comparison between the two years, the quantities of the several articles produced should be examined. It is impossible, of course, to give any total in quantities when so many materials are different units of measures are taken into consideration. The total that can be given is that of values, and the decrease in the amount is in most cases very much greater than the falling off in some quantities produced. The year 1894 will long be remembered as one of low prices, and in almost every industry values were brought down to a point lower than had ever been known. It was a repetition

perience of former panic periods, only intensified in our own the general distrust provoked by the condition of the currency. is to be an unavoidable result of the concentrating of capital and continual improvement in processes which characterise the present production should increase in a greater ratio than consumption that at greater or less intervals there should be a period when must be called until the demand can again increase to the level supply; and 1894 being one of those periods, the producers accordingly.

however, a proof of the comparatively small amount of the supply that the quantities produced of the leading materials last year a much less decrease than has been generally believed even informed persons. To take a few leading items, for instance, production of bituminous coal, which is really an index to the condition of the manufacturing industry, showed a decrease from 1893, standing the strikes which prevailed, of only 11,000,000 tons, or 9 per cent., while that of anthracite coal actually increased by 100 tons, or nearly 10 per cent.; so that the decrease in the total of fuel was less than 6,221,000 tons, or 34 per cent., while the value was 7 per cent. In pig-iron the decrease was comparatively small—only about 400,000 tons—and we find that all this was in the earlier part of the year, while at the close of 1894 the production was running at a rate which promised to make the production exceed 9,000,000 tons, which has thus far been the highest of our production. In some other important metals again there was an actual increase, amounting in the case of copper to 26,250,000 tons, while the decline in home consumption was offset by a corresponding increase in the exports.

The silver production of the United States was maintained at a higher level than had generally been expected, or than had been expected by many persons who should be well acquainted with the industry. In 1893 the production was 60,500,000 oz., a decrease of 100 oz. from 1892, when it reached its highest level. The low production which 1894 opened, and the withdrawal of the artificial stimulus created by the Sherman Law, led many persons to believe that the reduction would approximate the amount of the Government's estimates under that law, or 54,000,000 oz., which would have been equivalent to practically wiping out the industry. The actual decrease was only 10,654,000 oz., or about 18 per cent. The reduction leaves the United States the greatest silver producer in the world, and the industry is, and doubtless will continue to be, a most important one.

One of the most notable features of the year is the increase in the production of gold. From time to time throughout 1894 the diversion of labour from silver to gold mining has been noted. Not only have many new gold discoveries been recorded, but in many old, old mines, which had been abandoned because they would not pay with the wasteful and defective methods of early days, have been reopened with prospects of success under better and more careful management. The full effect of this revival, however, will not be felt until the increase in the gold output has somewhat disappointed general expectancy, although hardly that of careful observers. The output of gold in the United States last year was \$39,761,000, an increase of \$3,806,000 over 1893 and \$6,764,000 over 1892. In gold Australia has also shown a considerable gain, and runs the States quite closely this year; while the phenomenal increase in the Transvaal mines has also made South Africa a close competitor for the first rank as a producer of the yellow metal. *Engineering and Mining Journal.*

Trade Notes.

NEW CHIEF INSPECTOR OF ALKALI WORKS.—By reason of the urgency of time the necessity has arisen of appointing a new chief inspector under the Alkali &c. Works Act, to fill the vacancy created by the retirement of Mr. A. E. Fletcher from the post he has so ably filled since his appointment in 1884. Under these circumstances we feel sure it will be with pleasurable feelings that the members of the alkali industry will learn that the President of the Government Board has elected Mr. R. Forbes Carpenter, of Exeter, to fill the vacancy. Mr. Carpenter has long been a reliable district inspector under the Act, as well as being chairman of the Manchester Section of the Society of Chemical Industry. We wish him every success in the pursuance of the more exalted duties to which he has deservedly been called. Mr. Fletcher was the last of the inspector's remaining in office, out of the five that were originally appointed in 1863.

SEWAGE TREATMENT.—We learn that the Hermite process of sewage treatment has been undergoing trial at Lytham this year. The report of the experiment has not been issued as yet, how-

TOBACCO GROWING IN KENT.—The Excise authorities have licensed tobacco-growing experiments in Kent for another season.

ACCIDENT AT A GLASS WORKS.—A tank containing 190 tons of molten glass burst at Mexborough on Monday, but fortunately no one was hurt.

NEW COLD STORES.—The erection of new store chilling and cooling rooms has been commenced by the London Corporation. The work will cost between £40,000 and £50,000.

SCOTCH COAL SHIPMENTS.—The shipments of coal from Scotland last week amounting to 176,000 tons, were the best on record this year, being an increase on the previous week of 30,000 tons and an increase of 11,000 tons on the same week last year.

REDUCED DUES ON PETROLEUM.—The Mersey Dock and Harbour Board have reduced the dues on burning oils and petroleum from 1s. 8d. to 1s. 4d. per ton. This is evidently owing to the threatened competition by the Ship Canal in this direction.

INCREASED SPANISH PETROLEUM DUTY.—The Budget Committee of the Congress has resolved to propose to the Chamber an increase of the duty on raw petroleum to 35 pesetas per gallon, and an increased duty on the refined article amounting to 45 pesetas per gallon.

GOLD RECOVERY BY THE MACARTHUR PROCESS.—The directors announce that 25,500 oz. of Gold have been recovered at the Rand and 8,700 oz. in other districts (total, 66,200 oz.) during May by means of their MacArthur-Forrest cyanide process. The April total was 62,900 oz.

THE NEW SYDNEY TARIFF.—The Legislative Assembly has, by 64 against 33 votes, passed the second reading of the new Customs Duties Bill, which abolishes the duties imposed by the Dibbs Government in 1891 and establishes a new tariff on what is virtually a Free Trade basis.

TRADE REVIVAL IN NEWFOUNDLAND.—A telegram from St. Johns states that the season's cod fishing will probably be the best that has been known for many years. Two thousand men are employed on the railway, and it is expected that a hundred additional miles will be constructed this year. Business has much improved of late, and there are indications that the effects of the recent depression are passing off.

HEAVY FAILURE.—The failure of Messrs. Stuart, Brown, and Co., of Glasgow, is announced. The firm has been for some time past doing a large speculative business in sugar with London, Liverpool, Glasgow, and Manchester, and it is estimated that their commitments amount to between £30,000 and £40,000, of which about one-fourth will fall on London.

RELINQUISH PORTLAND CEMENT WORKS, LTD.—According to a statement issued from the London Bankruptcy Court by Mr. C. J. Stewart, the Official Receiver and Liquidator, the Reliance Portland Cement Works, Limited, was formed in February, 1890, to take over certain cement works at Strood, Kent, and its nominal capital was £60,000. The vendors were the London Agency, Limited, who guaranteed and paid a dividend of 10 per cent. on the preference shares up to Jan. 1891. No dividends have been paid by the company. In March, 1894, Mr. Greville, formerly a director, acting for himself and other debenture holders, seized the company's property and sold it for £19,744, a portion of which went to satisfy claims for rent and payment of interest and mortgages. The late secretary attributes the failure of the company to delays in constructing additions to buildings, to the great drop in the price of cement, and to a fire necessitating almost the entire suspension of manufacture for some months.

AN OBNOXIOUS MANURE WORKS.—At Greenwich this week, James Judd, senior, the tenant of a railway arch of the London, Brighton, and South Coast Railway at Rotherhithe, was summoned by the London County Council for disobeying an order made by the magistrate at Greenwich Police-court on October 13th, 1893, (C. T. J. 337, p. 289) by which he was altogether deprived of the right of carrying on the business of a manure manufacturer at the said arch. There was a third summons for establishing the business anew. Mr. Coleman prosecuted for the Council, and Mr. Ody was for the defence. Defendant had been several times before the Court for breaches of the Council's regulations, and in October, 1893, when the order was made depriving him of the right to carry on the business, an appeal was lodged but the conviction was confirmed. Captain Metcalfe and Mr. Chaffey, inspectors for the Council, gave evidence to show that a quantity of fish manure was deposited on the defendant's premises. The defence was that defendant supplied a farmer with manure, and on this occasion the farmer was unable to take it for a few days, hence it remained on defendant's premises. He said he would give an undertaking that no more of the manure should be on the premises. Mr. Kennedy said that the defendant had not obeyed the order of the Court, which must be respected, and the defendant would be fined £50. and 2s. costs on the first two summonses and 5s. and costs in the third case.

Market Reports.

TAR AND AMMONIA PRODUCTS.

Benzols are very quiet at 1s. for 90's and 11d. for 50/90's. Carbolic acids continue firm and in good demand at 1s. 7½d. for 60% crude, and 6½d. for 40% crystals. Naphthas are quiet, especially solvent, in which there is only a small business passing. Anthracene is unaltered in price for both qualities. Pitch steady at 37s. to 37s. 6d., f.o.b. East Coast.

Sulphate of ammonia keeps steady, prices being well maintained. The demand has been moderate, and owing to the combined influences of the season of small production and the firmness of holders, orders have had to be carried through at full prices. Current values are:—London £9. 17s. 6d., Liverpool £9. 17s. 6d. to £10., Hull £9. 17s. 6d., and Leith £9. 17s. 6d. to £10. Forward transactions have been of a limited character.

REPORT ON MANURE MATERIAL.

The market throughout the week has been quiet, there being very little disposition on the part of manure makers to operate ahead, unless at easier prices than have been recently asked. Mineral phosphates are easier, and it is reported that sales of 75/80% grade of Florida rock have been made, but prices do not transpire. The value is about 6½d. per degree, in cargoes, c. f. and i. to good United Kingdom ports. South Carolina rock and similar grade Algerian may now be had at 5¼d. per unit, but Peace River rock is held for more money. Prices like these must be unremunerative, if not ruinous, to raisers, and in the absence of improvement a large curtailment of production must ensue. River Plate cargoes of bones continue to be inquired for, and the value of handy sizes is £4. 5s. per ton. There is nothing doing in East Indian bones and bone meal, buyers refusing to follow the advance demanded by sellers for forward shipment. Nitrate of soda is steady, but there is not much doing either on spot or forward. Spot value of good quality is 8s. 3d. per cwt. Autumn shipments are worth 8s. 4½d. to 8s. 6d. per cwt., according to position.

LIVERPOOL MINERAL MARKET.

Our market is a little livelier this week, and stocks are moving rather more freely; prices, however, are without material change. Manganese: There are no arrivals to report this week. Ground manganese is in steady demand at £6., £8., £10., and £12. 10s. per ton, according to quality. Manganiferous ore is quiet at 15s. to 17s. 6d. per ton for cargoes. Bauxite: Irish Hill brands are in strong demand for alum and other purposes, and prices remain firm and unaltered at 20s. per ton for first quality, 18s. per ton for second quality, and 12s. per ton for third quality, f.o.b., in cargoes. French chalk: Arrivals this week are nil, but prices remain as before: "Angel White" and "Gold Medal" brands at 70s., 80s., 90s., and 110s. per ton, according to grade. Plumbago is in good request at £5. to £6. per ton for founders' and lubricating qualities, with other qualities in proportion. There are no arrivals to report, but orders for delivery from stocks are being freely given. Arsenic continues firm at about £16. per ton. Borax: Carbonate is in rather quiet demand, but prices are firm at: Nevada 70s., and lump 85s. and 110s. per ton, according to grade. Sulphate is unaltered, the demand for both lump and powdered being steady; prices for powdered sulphate are firm at: No. 1, 60s. to 70s. per ton; No. 2, 55s.; and No. 3, 47s. 6d. to 50s. per ton. Fuller's earth is in increasing demand, especially the better qualities: lump, 50s. to 55s. per ton; ground about 55s. per ton; impalpable powder, 60s. per ton. Ochres and umbers are in fair inquiry, J.C. ochre being done at 60s. per ton, and prime levigated umber at 40s. to 60s. per ton, f.o.b.

MISCELLANEOUS CHEMICAL MARKET.

Business during the past week has been fairly satisfactory. There are no changes of importance to report. Bleaching powder continues in steady demand at £6. 17s. 6d., rails, and £7. 5s., hardwood, f.o.b. Caustic soda has good inquiry, but prices remain unchanged. Soda crystals dull at 35s. per ton (bags), and 37s. 6d. (casks), rails, makers' works. Salts are quiet at 15s. Nitrate of soda is in rather poor request, and there are still sellers at £8. 2s. 6d. to £8. 7s. 6d. per ton, according to quality. Sulphate of copper firm at £15. 10s. Lead salts rather firmer. White acetate (foreign) is quoted at £24. 10s., known £15. Acetate of lime is still offered for spot delivery at £5. 15s. For forward delivery the market is stronger. Acetic acids continue to be sold at very low rates. Borax is without improvement, and prices

varying from £18. 10s. to £19. 10s. are quoted. White pow arsenic strong and scarce: £15. at Garston is value to-day. M of ammonia is a little easier. Carbolic acids in good demand prices have an upward tendency.

TYNE CHEMICAL REPORT.

Chemicals are quiet, though there is a fair business doing. show no variation of moment. Caustic in fair demand, at £7. for 76/77%. Soda crystals scarcer, at £1. 17s. 6d. per ton in Bleaching powder, £7. to £7. 5s. per ton.

Bleaching powder, softs, £7. 5s. per ton, nett; hards, £7. 10s. per ton, nett; caustic soda, 76/77%, £9. 10s. per ton, nett; do., 70%, £7. per ton, nett; recovered sulphur, 2 cwt. bags, £3. 17s. 6d. per ton, soda ash, 48%, £3. 15s. per ton, nett; do., 52%, £4. 2s. 6d. ton, nett; do., 56%, £4. 10s. per ton, nett; alkali, 36%, £3. per ton, nett; white alkali, 48%, £4. 10s. per ton, nett; do., 50%, 15s. per ton, nett; do., 52%, £5. 5s. per ton, nett; hyposulphate soda, 5-7 cwt. casks, £6. per ton, nett; do., 1 cwt. kegs, £6. 12 per ton, nett; silicate of soda, 75° Tw., £2. 12s. 6d. per ton, do., 100° Tw., £3. per ton, nett; do., 140° Tw., £3. 7s. per ton, nett; soda crystals, casks, £1. 17s. 6d. per gross weight; do., 2 cwt. bags, £1. 17s. 6d. per ton, chlorate of potash, 5¼d. per lb., less 6%; pearl hard £3. per ton, nett; pure white sulphate of alumina, £4. 2s. per ton, nett; blanc fixe, £7. 10s. per ton, nett; chloride of bar £7. 10s. per ton, nett; carbonate of alumina, £28. 15s. per ton; aluminate of soda, £33. 15s. per ton, nett; in 5 ton lots, 10s. per ton, nett.

SALT.—South Durham salt is steady, at 9s. to 9s. 6d. per f.o.b. Tees.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron, steady: Scotch was closed at 43s. 4½d., Middlesbrough 35s. 2d. cash, and hem 43s. 6½d. Copper, quiet: Chili bars, G. O. B.'s and G. M. closed at £42. 7s. 6d. to £42. 12s. 6d. cash, and £42. 15s. in three months. Tin, easier: Straits closed at £62. to £62. 10s. and £62. 7s. 6d. to £62. 17s. 6d. three months; Australian, English ingots, £66. Lead, steady: Spanish, £10. 6s. 3d. to 7s. 6d.; English, £10. 8s. 9d. to £10. 10s. Silesian spec Ordinary, £14. 10s. Nickel, 1s. 2½d. Antimony, £32. Quicksilver: first hands, £7. 10s.; second hands, £7. 8s. Copper shares, steady: Cape, 1½ to 2½; Copiapó, 2 to Libiola, 3¼ to 3; Mason and Barry, 2½ to 2¾; Rio Tinto, to 16½; Tharsis, 4¼ to 5.

GLASGOW, WEDNESDAY.—Market firmer, with fair business. Scotch done at 43s. 5d., 43s. 5½d., and 43s. 5d. cash; closing buyers at 43s. 4½d. cash, sellers ask 43s. 5½d. Cleveland done 35s. 3d. five days, also at 35s. 2½d. cash; closing with buyers 35s. 2d. cash, sellers ask 35s. 2½d. Cumberland hematite with buyers at 43s. 6½d. cash; sellers ask 43s. 7½d. Middlesbrough hematite closes with buyers at 42s. cash, sellers ask 42s. 1½d.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY
OILS.—Palm oil is easier, but sales are more frequent, being in Lagos, to arrive, at £20. 10s., and Accra at £18. 15s., ex O. Olive is steady, with a moderate amount of business passing; 5 has been done at £30. per ton, ex store. Linseed continues on the advance, Liverpool makes in export casks being quoted 23s. cwt. Cottonseed is dull, but values have not altered so far, Liverpool refined being quoted 18s. 3d. to 19s. and American 18s. 3d. to 19s. per cwt. There is a fairly good business doing in castor oil, with seconds Calcutta at 2½d. and first pressure French 2½d. to 2¾d. lb. Tallow is in rather limited request at current prices. Resins: turpentine firm, with a fairly good all round business doing. Spirit turpentine are scarce, and in consequence firm at 23s. per Liverpool, and 22s. 9d. Garston. Petroleum, steady: American 6 to 8½d., and Russian refined 6d. per gallon.

COLOURS are steady, without alteration in prices. Ochres: Oxfordshire, common, £10., medium, £12., best, £14. Derbyshire, common, 40s.; medium, 50s., best, 60s.; Welsh, 90s., seconds, 50s., and common, 18s.; Irish, Devonshire, 40s. 45s.; French, J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. Um Turkish quiet; Devonshire, 50s. to 55s. White lead, £16. Red unchanged. Venetian red, £6. to £10. Cobalt: Prepared 9s. 9d.; black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2s. 6d. Oxide of iron: Common, £7.; medium, £10.; finest, £12. Zinc oxide, £22. 10s. to £25.

LS.—There is really no change to report in prices. The volume of business is fairly large and steady, the majority of collieries at full time. Best Northumbrian steady, at 8s. 9d. to 9s. per cond quality, 7s. 9d. to 8s. per ton; small steam, 3s. 6d. to 4s. per ton; gas coals, 6s. 6d. to 7s. per ton; bunker coals, 6s. 3d. to 6s. 6d. per ton; coke firm, at 12s. 6d. to 14s. per ton.

WALL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

LS.—The general dullness which has been the characteristic of the market during the open months continues to hang over, and will not until the time for feeding stuffs again draws nearer. The principal reports into Hull up to date compared with the same period a year ago have been: Linseed, 233,787 qrs., against 195,953 qrs.; rape, 1,869 qrs., against 57,593 qrs.; cottonseed, 93,968 tons, against 105,000 tons; olive oil, 5,837 casks, against 11,195 casks; rape oil, 1,000 casks, against 3,922 casks; oilcakes, 6,854 tons, against 9,059 tons; tallow, 6,134 cwts., against 9,059 cwts.; turpentine, 5,986 barrels, against 4,352 barrels. Linseed oil has somewhat receded from the position it held the greater part of last week, closing firm at 21s. 6d. per cwt. month; 20s. 10½d. naked; July-Aug., 20s. 6d.; Sept.-Oct., 19s. 7½d. per cwt. naked. Boiled and refined, from £1. 10s. to £1. 12s. per ton extra. The export for the week has been 1,680 tons. Refined cotton oil steady, at 16s. 6d. to 16s. 7½d. naked spot; July, 16s. 9d., and Nov.-April offer at 17s. 1½d. Crude, on the other hand, offers at 14s. 10½d.; casks, 17s. 6d., and ordinary barrels, 18s. per ton extra. Export of refined oil for the week has been 1,680 tons. Cod oils unchanged. Spirits of turpentine, 23s. 3d. per barrel drying oil, £12. per ton. Liquid scouring soap for wool, £15. per ton. Soft soap, 14s. 6d. Olive oil unchanged.

ES.—A quiet demand for all kinds, without alteration in prices. Linseed cakes, 95% pure, £6. to £6. 2s. 6d. Russians, 1s. 6d. Oil cakes, £5. 2s. 6d. to £5. Cotton cakes, best £4; seconds, £3. 15s. Rape Cakes: East India, £3 7s. 6d.; East, £2. 12s. 6d.; feeding, £4 7s. 6d.

WTS.—Makers continue active, without alteration in prices. Ready-mixed paints, in lever tins, from £23. per ton. and red leads unchanged, also oxide of zinc. Imperial black in good demand, at £5. per ton. in barrels. Venetian red of iron, green, blue, and black paints from £11. per ton. Urines, dry, from 3d. to 8d. per lb. Paint remover, 25s. per cwt. Finish from 5s. 6d. per gallon.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

Rate of ammonia, prompt value, has again to be stated as at this market, being the third week in succession, and a sample of the quality which is very rare with this article. Dealers are of the opinion that the feeling is, if anything, rather firmer than it was a week ago, but agree that there is nothing like certainty with regard to the immediate future of the market. A small bulk of forward business has been done at £10. 5s. Little or no change is observable in mineral paraffins, consumption for the time being at the lowest for the year except in those of the latter, used in the candle manufacture, is fairly busy as to production in preparation for the new season. Soda is procurable from makers on rather easier terms. In general the slightly improved feeling seems to be retained, but there is no activity. Prices are all maintained.

Prices current are:—Soda crystals, 35s. to 37s. 6d. nett, Tyne; white alkali, 48/52°, £3. 15s. to £4. 5s. nett, Tyne; white alkali, 44. 10s. to £5. 5s. nett, Tyne; alum in lump, £5. 10s. nett, Tyne; caustic soda, white, 74° £9., 70/72° £7. 15s., 60/62° £6., and cream 60/62° £6. 10s., all nett, Liverpool; bleaching powder, £6. 5s. to £7. nett, Tyne; saltcake, 17s. 6d.; borax, English, £20., and boracic acid, £30. nett, Glasgow; bicarbonate of soda, 40. cwt. casks, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool; rate of potash, 4½d. nett, for Scotch and English deliveries (for 4½d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); rate of potash, 5¼d. less 5%, Liverpool; nitrate of soda, 8s. 6d.; sulphate of ammonia, £10. prompt f.o.b. Leith; uric acid, first and second white, £39. and £37. nett, any port; rate of copper, £15. 12s. 6d., less 5%, Liverpool; paraffin scale, hard and soft, 1½d. to 2½d. per lb.; paraffin wax 120° semi-refined, 2¼d.; paraffin spirit (naphtha), 5d. per gallon; paraffin (ring), No. 1 6½d., and crystal 6¾d., at works, for buyers (English sales 1d. lower); ditto (lubricating) 86½°; 88½° £4. 10s. to £5., and 89/89½° £5. to £5. 10s. Week's supply of sugar at Greenock were 750 bags beet unrefined, and 100 bags beet refined (French crystal).

New Companies.

Alianza Co., Ltd.—CAPITAL £1,000,000, in £5. shares. This company has been formed to acquire and work the Alianza Nitrate grounds, situate in the province of Tarapaca, Chili, and also certain other lands at Port Chucumata, the property of Messrs. Gibbs and Co., Iquique. The subscribers to the memorandum of association are:—H. W. Gibbs, 15, Bishopsgate-street, E.C., merchant; A. Sillem, 15, Bishopsgate-street, E.C., merchant; A. G. H. Gibbs, 15, Bishopsgate-street, E.C., merchant; V. Gibbs, 15, Bishopsgate-street, E.C., merchant; H. C. Gibbs, 15, Bishopsgate-street, E.C., merchant; H. L. Gibbs, 15, Bishopsgate-street, E.C., merchant; B. A. Miller, 18, Queen's Gate Gardens, S.W., merchant.

Haslingden Grane Brick and Terra-Cotta Co., Ltd.—CAPITAL £8,000, in £50. shares. This company has been formed to acquire mines, minerals, &c., at Haslingden, Lancs., and to carry on the business of brick and tile manufacturers. The subscribers to the memorandum of association are:—T. Foster, 18, Whalley-road, Clayton-le-Moors, Lancashire, builder, 1; J. Haworth, 59, Abbey-street, Accrington, cabinet maker, 1; J. Smith, 108, Royds-street, Accrington, brick manufacturer, 1; A. Shaw, Carr Hall Villa, Haslingden, Lancashire, overlooker, 1; J. L. Taylor, Haslingden Grane, Lancashire, cloth agent, 1; W. M. Hall, St. James's-street, Accrington, solicitor, 1; J. H. Maden, M.P., Rockliff House, Bacup, Lancashire, 1.

J. Fison and Co., Ltd.—CAPITAL £100,000, in £10. shares. This company has been formed to acquire the business now and hitherto carried on by James O. Fison and Edward H. Fison at Ipswich, and to carry on in the United Kingdom and its colonies, and in North and South America, or elsewhere, the business of seed crushers, seed merchants, manufacturers of and dealers in oil, oilcake, and every description of feeding stuffs, alkalies, sulphur, hydrochloric, sulphuric, and other acids, chemical, artificial, and other fertilisers and manures and other chemicals, and the general business of manufacturing and agricultural chemists. The subscribers to the memorandum of association are:—J. O. Fison, J.P., Sutton Hall, Suffolk; E. H. Fison, F.C.S., Stoke House, Ipswich; E. E. Fison, Stoke House, Ipswich; F. I. Cubitt, Runciton House, Bramford; J. W. Rouse, Arcade-street, Ipswich; B. H. Chevalier, 1, Victoria-road, Old Charlton, Kent; G. B. Courtney, M.A., M.D., 47, Seymour-street, W.

The Patent List.

This list is compiled from Official sources in the Manchester Technical Laboratory, under the immediate supervision of George E. Davis and Alfred R. Davis, who report professionally upon the value of Chemical Patents.

APPLICATIONS FOR ENGLISH LETTERS PATENT.

Improvements in Electrodes and Apparatus for the Electrolytic Production of Bleaching Agents. H. Blackman. 11,016. June 4.
Improvements in Accumulators. T. Eremin. 11,032. June 4.
Smokeless Steam Boiler Furnaces. W. T. Smith. 11,054. June 5.
Extracting Precious Metals. E. Fischer, E. Klein, and F. Mahlstedt. 11,072. June 5.
Improvements in Filtering Materials. A. Smith. 11,073. June 5.
Artificial Fuel. G. Haycraft. 11,082. June 5.
Oil Filtering Apparatus. A. Orlandi. 11,083. June 5.
Painting Machine. R. Wallwork and A. C. Wells. 11,090. June 5.
Treating Refractory Sulphide Ores. C. F. Claus. 11,095. June 5.
Refuse Consuming Furnaces. G. Defosse. 11,147. June 6.
Moulding Fibrous Pulp. J. A. Wheeler. 11,169. June 6.
Smoke Consuming Furnaces. J. V. Gane. 11,185. June 6.
Extracting Manganese from Spiegel Slag and Utilising Bye-Products. G. H. Llewellyn. 11,190. June 7.
Smoke-Consumer for Locomotive and other Boilers. A. Silbermann. 11,265. June 8.
Manufacture of Cement. W. Slark. 11,267. June 8.
Manufacture of Sulphocyanide Salts from Nitrates, Bisulphide of Carbon and Sulphuretted Hydrogen. O. Imray. 11,287. June 8.
Obtaining Metals or Alloys by Electrolysis. E. Jordis. 11,289. June 8.

Gazette Notices.

PARTNERSHIPS DISSOLVED.

E. S. JONES and S. G. BRUFF, paper manufacturers, Banner-street, St. Luke's, E., under the style of Jones and Bruff.
C. E. NEESHAM, J. D. WHITE, and F. W. NEESHAM, cement manufacturers, etc., Victoria-street, W., under the style of the Fireproof Construction Co.

IMPORTS OF CHEMICAL PRODUCTS

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.								
Week ending June 1st.								
Acetate of Lime								
Belgium	200 pgs.	Lower & Sons						
Acetic Acid								
Holland	200 pgs.	Barclay & Co.						
"	"	L. & M. Jones						
Acetone								
Germany	200 pgs.	Wiley & Co.						
Holland	"	Phillips & Co.						
Alkali								
France	100	E. Barker & Co.						
Alum								
Holland	100 pgs.	Chambers & Co.						
Antimony								
Holland	200 pgs.	Barclay & Co.						
Antimony Ore								
"	"	J. Barker						
Arsenic								
"	"	J. Barker						
Barium								
Canada	100	G. Ward & Son						
Italy	"	Grand Prix						
Barytes								
Belgium	200 pgs.	J. C. Jones & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"	Wiley & Co.						
Holland	"	Wiley & Co.						
Germany	"							

Oxide—
and, 50 cks. J. Matton
many, 25 Beresford & Co
and, 500 Soundy & Sons
80 brls. M. Ashby, Ltd.
ates, 100 "
many, 50 "
10 Fellows, Morton, & Co.

LIVERPOOL.

Week ending June 6th.

ite of Lime—
York, 231 bgs.
m, 160 R. J. Francis
& Co.

c Acid—
rdam, 20 blns.
nen—
eilles, 1 cs.

ony—
lagasta, 445 bgs. G. A Witt
170 sks. Balfour
293 Williamson
Hainsworth Watson

es—
burg, 10 cks.
erp, 38 50 bgs.

Ash—
res, 150 bgs. W. B.
Dickinson

Meal—
ay, 8,701 bgs.

Oil—
ue, 251 sks.
Ralli Bros.

ilts, 1,000 cs. 8
silles, 27 9 cks. 258 brls

c Soda—
ia, 91 bls.

als (otherwise undescribed)
urg, 6 cs.
ore, 80 cks.
elphia, 41

g, 13 cks. 9 brls.
J. T.
Fletcher & Co.

ulam, 11 cs. 6 cks.
erp, 1

eed Oil—
leans, 1,000 brls.

of Tartar—
ona, 15 cks 5 pkgs.

ine—
t, 100 bgs.

iffs—
arrobilla
al, 317 bgs. Duncan,
Fox & Co.

1,355 G. D. Vaughan
575 Schintz & Co.

alillo, 1,200
1,381

mbro, 11 cs.
into
dam, 1 cs.

o, 24 cks German Bank
ilts, 200 brls.

ilts, 10 10 bxs. W.
ork, 25 Bingham
291 T. Atkin & Co.
Oak Extract
Co., Ltd.

urg, 1 cs.
ux, 50 cks.

ork, 70 22 G. M.
Schweich

ic ore, 3 cs. Gruning
ore, 4 & Co.
D. Midgley &
Sons

1,438 ps.
bler
orc, 252 bgs.

go, 1 cht.
ia, 432 logs.

wood
arg, 3,584 bgs.

abolams
y, 1,999 pkts.

Orchella
Bremen, 10 bls.
San Francisco, 168 B. Gebr
83

Saffron
Valencia, 1 cs.

Sumac
Palermo, 1,150 bgs. 95 bls.
250 H. Rooke,
Son & Co.

"
60 J. Kitchin, Ltd.
150 Sampson & Co.

Farina—
Havre, 1,388 cs. Cunard S. S.
Co., Ltd.

Fiume, 100 bgs.
Trieste, 200

Glucose—
New York, 650 brls.
Baltimore, 200
Hamburg, 40 cks.

Glue—
Hamburg, 300 bgs.
Rouen, 20 cks. R. J.
Francis & Co.

"
Montreal, 40
Rotterdam, 2 brls.
Stettin, 14 bskts. N.
Johansen &
Dahl

Guano—
B. Ayres, 1,190 bgs. Williamson
Milligan

Lamp Black—
Philadelphia, 280 bgs. Morris Ashby,
Ld.

"
140

Limestone—
Antwerp, 3 cs. J. T. Fletcher
& Co.

Manganese Ore—
Coquimbo, 920,000 kilos.

Mineral White—
Fiume, 200 bgs.

Minium—
Rotterdam, 4 cks.

Ochre—
Marseilles, 20 brls. J. L. Lyon
88 cks.

Paint—
Boston, 35 cs. M. Nicol
& Co.

Paraffin Scale—
New York, 1,113 brls. Thompson
& Bedford

Baltimore, 100
Philadelphia, 400 300 cs.

Paraffin Wax—
Philadelphia, 221 brls.

Phosphate—
Ghent, 250 bgs. T. Vickers
& Son
Antwerp, 400 t.

Phosphate Rock—
Norfolk, Va., 30 cs.

Pitch—
Marseilles, 14 cks. 56 brls.
Boston, 50 tubs

Potash—
Hamburg, 60 cks

Pumice Stone—
Teneriffe, 440 bgs.

Pyrites—
Huelva, 787 t. Matheson & Co.
6,431

Rosin—
Norfolk, Va., 151 brls.
New York, 1,000
Savannah, 3,775

"
Boston, 828 1,616 bls.
Wilmington, 1,600

Rosin Oil—
Savannah, 35 brls

Saltpetre—
Hamburg, 21 cks. 50 brls.

Soap—
Marseilles, 57 cs. 60 bxs. Barclay & Sons
Boston, 54 Paul Behrends
Naples, 500 Weaver &
Leghorn, 20 Sterry
W. Underwood & Co.

"
Philadelphia, 40
New York, 40 Hatton &
Cookson
R. Crooks & Co.

"
950
3

Soapstone—
Trieste, 103 bls. W. Harrison
& Co.

Philadelphia, 103 bgs.

Starch—
New York, 925 bgs.
Baltimore, 400 sks.
Rotterdam, 40 cs.
Antwerp, 484 J. T. Fletcher
& Co.

"
20

Stearine—
Antwerp, 12 bgs. 2 cs.

Sulphur—
Catania, 370 bgs. 103 t. 50 cs. 20 cks.
20 brls.

Sulphur Ore—
Huelva, 1,516 t. Matheson & Co.

Superphosphate—
Antwerp, 50 bgs.

Tallow—
New York, 100 tcs. B. Ayres, 2 pps. Rodger,
Best & Co.

Tar—
Wilmington, 3,590 brls.

Tartar—
Bordeaux, 30 cks.

Tartaric Acid—
Hamburg, 6 cks.

Tin Ashes—
Bordeaux, 10 brls.

Treacle and Molasses—
New York, 60 brls.
N. Orleans, 1,200
Boston, 250
Philadelphia, 1,550

Ultramarine—
Hamburg, 4 cks.

Waste Salt—
Hamburg, 3,863 bgs. J. T.
Antwerp, 80 Fletcher & Co.

White Lead—
Rotterdam, 47 cks.
Ghent, 15

Zinc Oxide—
Antwerp, 155 brls.

Zinc White—
Hamburg, 80 cks.
Rotterdam, 125

MANCHESTER.

Week ending June 8th.

Acetic Acid—
Antwerp, 40 blus.
Rotterdam, 20

Castor Oil—
Antwerp, 51 brls.

Chemicals (otherwise undescribed)
Rotterdam, 13 cks.

Colours—
Antwerp, 16 cks.
Rotterdam, 13 23 cs. 58 brls.

Hamburg, 31 12 2 bks.

Dye stuffs—
Alizarine
Rotterdam, 20 cks. cs. 2

Annatto
Bordeaux, 4 cks. J. & P.
Hutchinson

Extracts
Bordeaux, 105 cks. J. & P.
Hutchinson

Farina—
Rotterdam, 170 bgs.
Stettin, 1,200 Brown, Geveke,
& Co.

"
Hamburg, 570
Gelatine— 2,670

Rouen, 20 cs.

Glue—
Rotterdam, 11 cks. 80 bgs.
Rouen, 65 20 bls. 5 cs.

Lead Acetate—
Rotterdam, 29 cks.
Rouen, 15

Litharge—
Rotterdam, 3 cks.

Mineral White—
Bordeaux, 130 bgs. J. & P.
Hutchinson

Ozokerit—
Stettin, 75 blks.

Pitch—
Rotterdam, 25 cks.
Bordeaux, 30 J. & P. Hutchinson

Potash—
Antwerp, 41 dms.
Rouen, 2 cks.

Potassium Chlorate—
Gothenburg, 50 kgs.

Pyrites—
Huelva, 1,378 t.

Salt—
Antwerp, 1 pkge.

Sodium—
Rotterdam, 15 cks.

Sodium Acetate—
Rouen, 4 cks.

Sodium Bicarbonate—
Rotterdam, 20 cks.

Starch—
Ghent, 20 bls.
Antwerp, 378 cs.

Sulphuric Acid—
Rotterdam, 1 cs.

Tar Oil—
Antwerp, 26 cks.
Rotterdam, 40

Tartar—
Bordeaux, 4 cks. J. & P.
Hutchinson

Tartaric Acid—
Rotterdam, 6 cks. 2 brls.
Bordeaux, 4 J. & P. Hutchinson

Tar Waste—
Rotterdam, 14 cks.

Ultramarine—
Rotterdam, 5 cs. 2 cks.

Waste Salt—
Hamburg, qty.

White Lead—
Antwerp, 8 cks.
Rotterdam, 8

Wood Pulp—
Christiania, 2,250 bls. Christopherson
& Co.

"
340 Newall & Son
75 H. B. Wood
Drammen, 500 Becker & Co.
160 East Lan. Paper
Mill Co.

"
101 1/2 bds.
Skie, 1,040 bls.
Christiania, 1,000

Zinc Chloride—
Rotterdam, 10 cks.

Zinc Oxide—
Antwerp, 26 brls.

Zinc White—
Rotterdam, 10 cks.

HULL.

Week ending June 8th.

Acetic Acid—
Rotterdam, 20 blns. Hutchinson
& Son

Acid—
Rotterdam, 5 cks. Hutchinson
& Son

Albumen—
Riga, 3 cs.

Barytes—
Antwerp, 50 bgs 11 cks. Bailey &
Leatham

"
108 cks. H. F. Pudsey

Castor Oil—
Antwerp, 53 brls. Wilson,
Sons, & Co., Ltd.

Chemicals (otherwise undescribed)
Stettin, 28 cks. Wilson, Sons,
& Co., Ltd.

Bremen, 5 pks Veltmann
& Co.

Antwerp, 25 dms. 15 75 6 brls Wilson,
Sons, & Co., Ltd.

Cod Oil—
Bergen, 63 brls. Wilson, Sons,
& Co., Ltd.

Aalesund, 96 pks.

Colours—
Rotterdam, 151 pks. W. & C. L.
Ringrose

"
5 cks. 37 5 bgs Hutchinson
& Son

Rouen, 7 brls.
Antwerp, 6 Bailey & Leatham
" 21 17 Wilson, Sons,
& Co., Ltd.

Hamburg, 22 cks. G. Malcolm & Son		Bremen, 1,770 Veltmann & Co.		Argols 80 cks.		TYNE.	
Bremen, 4 cks. Veltmann & Co.		Antwerp, 200 Wilson, Sons, & Co., Ltd.		Extracts 24 cks.		<i>Week ending June 8th.</i>	
" 8 Hanger, Watson & Co.		Antwerp, 8 bgs. Wilson, Sons, & Co., Ltd.		Nantes, 24 cks.		Barium—	
Christiania, 20 Simon, Bes & Co.		Stockholm, 20 brls. Wilson, Sons, & Co., Ltd.		New York, 25 brls.		Rotterdam, 100 bgs. Tyne S. S. Co.	
1 kg. Wilson, Sons, & Co., Ltd.		Tar—		Antwerp, 4		Barium Chloride—	
Cottonseed Oil—		Bordeaux, 5 cks. Rawson & Robinson		Valonia		Hamburg, 153 bgs. Tyne S. S. Co.	
New York, 32 brls.		Tartar—		Mauritius, 901 bgs.		Barytes—	
Dextrine—		Rotterdam, 2 cks. W. & C. L. Ringrose		Farina—		Rotterdam, 600 bgs. Tyne S. S. Co.	
Sootin, 350 bgs. Wilson, Sons, & Co., Ltd.		Treacle—		Hamburg, 200 bgs.		Carbon Black—	
Dyestuffs—		New York, 300 brls. 250 pks. Wilson, Sons, & Co., Ltd.		Glue—		New York, 50 brls. Furness, Withy, & Co.	
Allizarine		Boston, 550 "		Rotterdam, 60 bgs. J. Rankine & Son		Cod Oil—	
Rotterdam, 104 pks. W. & C. L. Ringrose		Ultramarine—		Kelp—		Bergen, 10 brls.	
Logwood		Rotterdam, 3 cks. Hutchinson & Son		Stavanger, 1,553 bgs. H. C. Fairlie & Co.		Glucose—	
Harlingen, 6,265 pcs.		Yarnish—		Lamp Black—		New York, 330 brls. Furness, Withy, & Co.	
Wadder		New York, 5 cks. 5 brls. 33 pks. Wilson, Sons, & Co., Ltd.		Philadelphia, 43 brls.		Glue—	
Rotterdam, 2 cks. W. & C. L. Ringrose		White Lead—		Ochre—		Hamburg, 20 bgs. Tyne S. S. Co.	
Farina—		Rotterdam, 13 cks. W. & C. L. Ringrose		Rouen, 87 cks.		Rosin—	
Sootin, 148 bgs. Wilson, Sons, & Co., Ltd.		Wood Pulp—		Mauritius, 40 brls.		New York, 500 brls. Furness, Withy, & Co.	
Harlingen, 105		Rouen, 4 bls. Wilson, Sons, & Co., Ltd.		Phosphates—		Starch—	
Antwerp, 100		Hamburg, 84 Bailey & Leatham		Ghent, 900 bgs.		Rotterdam, 201 cks. Tyne S. S. Co.	
Glucose—		Heldingfers, 100 J. Good & Sons		Pitch—		Tartaric Acid—	
Sootin, 300 bgs. Wilson, Sons, & Co., Ltd.		" 130 Furley & Co.		Amsterdam, 5 cks.		Rotterdam, 3 cks. Tyne S. S. Co.	
Rotterdam, 40 Hutchinson & Son		GLASGOW.		Potash—		White Lead—	
Bremen, 50 Veltmann & Co.		Week ending June 13th.		Montreal, 10 brls.		Antwerp, 12 cks. Tyne S. S. Co.	
New York, 320 brls.		Acetate of Lime—		Rosin—		Wood Pulp—	
Glue—		New York, 1,000 bgs.		Brunswick, G.A., 2,033 brls.		Christiania, 80 bls.	
Sootin, 7 bks. Wilson, Sons, & Co., Ltd.		Acetic Acid—		New York, 900		Laurvig, 60	
Rouen, 1 cks. 30 cks. Rawson & Robinson		Rotterdam, 14 cks. J. Rankine & Son		Salicylic Acid—		GOOLE.	
Hamburg, 30 bgs. Wilson, Sons, & Co., Ltd.		Aluminium—		Rotterdam, 1 cks. J. Rankine & Son		<i>Week ending June 5th.</i>	
Dunkirk, 25 Wilson, Sons, & Co., Ltd.		Antwerp, 1 cks.		Sodium Chlorate—		Caoutchouc—	
Lead Acetate—		Rotterdam, 13 cks. J. Rankine & Son		Rouen, 17 cks.		Boulogne, 1 cks.	
Sootin, 25 cks.		Aniline—		Rotterdam, 2 cks. J. Rankine & Son		Dyestuffs—	
Paint—		Rotterdam, 1 cks. 10 cks. J. Rankine & Son		Sodium Sulphide—		Allizarine	
New York, 2 bks. Wilson, Sons, & Co., Ltd.		Acid—		Rotterdam, 11 cks. J. Rankine & Son		Rotterdam, 33 bels. W. S.	
" 2 bks. Wilson, Sons, & Co., Ltd.		Aluminium—		Starch—		Extracts	
Phosphoric—		Rotterdam, 1 cks.		Rotterdam, 133 cks. J. Rankine & Son		Rouen, 25 cks.	
" 1,000 bgs. Wilson, Sons, & Co., Ltd.		Aniline—		Stearine—		Fustic	
" 1,000 bgs. Wilson, Sons, & Co., Ltd.		Rotterdam, 1 cks. 10 cks. J. Rankine & Son		Bordeaux, 50 bgs.		Hamburg, 1,128 bgs.	
Phosphoric Acid—		Rotterdam, 1 cks. 10 cks. J. Rankine & Son		Amsterdam, 93		Logwood	
" 1,000 bgs. Wilson, Sons, & Co., Ltd.		Rotterdam, 1 cks. 10 cks. J. Rankine & Son		Tartar—		Hamburg, 4,013 pcs. 2,715 t.	
Phosphoric Acid—		Rotterdam, 1 cks. 10 cks. J. Rankine & Son		Bordeaux, 8 cks.		Laguna, 172	
" 1,000 bgs. Wilson, Sons, & Co., Ltd.		Rotterdam, 1 cks. 10 cks. J. Rankine & Son		reacle—		Dyestuffs (otherwise undistilled)	
Phosphoric Acid—		Rotterdam, 1 cks. 10 cks. J. Rankine & Son		Philadelphia, 1,300 brls. Waddell & Bryson		Rotterdam, 23 cks. 58 cks.	
" 1,000 bgs. Wilson, Sons, & Co., Ltd.		Rotterdam, 1 cks. 10 cks. J. Rankine & Son		Turpentine—		Boulogne, 8 12 17 24 25	
Phosphoric Acid—		Rotterdam, 1 cks. 10 cks. J. Rankine & Son		Brunswick, G.A., 1,650 brls.		Potash—	
" 1,000 bgs. Wilson, Sons, & Co., Ltd.		Rotterdam, 1 cks. 10 cks. J. Rankine & Son		Ultramarine—		Dunkirk, 70 dms. 14 cks.	
Phosphoric Acid—		Rotterdam, 1 cks. 10 cks. J. Rankine & Son		Rotterdam, 1 cks. J. Rankine & Son		Pyrites—	
" 1,000 bgs. Wilson, Sons, & Co., Ltd.		Rotterdam, 1 cks. 10 cks. J. Rankine & Son		Yarnish—		Huelva, 1,069 t.	
Phosphoric Acid—		Rotterdam, 1 cks. 10 cks. J. Rankine & Son		Rouen, 14 cks.		Saltpetre—	
" 1,000 bgs. Wilson, Sons, & Co., Ltd.		Rotterdam, 1 cks. 10 cks. J. Rankine & Son		New York, 11 brls.		Hamburg, 3 cks.	
Phosphoric Acid—		Rotterdam, 1 cks. 10 cks. J. Rankine & Son		Waste Salt—		Rotterdam, 17 brls.	
" 1,000 bgs. Wilson, Sons, & Co., Ltd.		Rotterdam, 1 cks. 10 cks. J. Rankine & Son		Hamburg, 1,220 bgs. 280 cks.		Antwerp, 213 bgs.	
Phosphoric Acid—		Rotterdam, 1 cks. 10 cks. J. Rankine & Son		White Lead—		Ultramarine—	
" 1,000 bgs. Wilson, Sons, & Co., Ltd.		Rotterdam, 1 cks. 10 cks. J. Rankine & Son		Rotterdam, 10 cks. J. Rankine & Son		Hamburg, 36 cks.	
Phosphoric Acid—		Rotterdam, 1 cks. 10 cks. J. Rankine & Son		Wood Pulp—		Waste Salt—	
" 1,000 bgs. Wilson, Sons, & Co., Ltd.		Rotterdam, 1 cks. 10 cks. J. Rankine & Son		Drontheim, 140 bls.		Hamburg, 306 cks. 900 bgs.	
Phosphoric Acid—		Rotterdam, 1 cks. 10 cks. J. Rankine & Son		Drammen, 2,695		Zinc Oxide—	
" 1,000 bgs. Wilson, Sons, & Co., Ltd.		Rotterdam, 1 cks. 10 cks. J. Rankine & Son		Christiania, 680		Antwerp, 25 brls.	
Phosphoric Acid—		Rotterdam, 1 cks. 10 cks. J. Rankine & Son		Zinc Oxide—		GRIMSBY.	
" 1,000 bgs. Wilson, Sons, & Co., Ltd.		Rotterdam, 1 cks. 10 cks. J. Rankine & Son		Rotterdam, 95 cks.		<i>Week ending June 8th.</i>	
Phosphoric Acid—		Rotterdam, 1 cks. 10 cks. J. Rankine & Son		Zinc White—		Caoutchouc—	
" 1,000 bgs. Wilson, Sons, & Co., Ltd.		Rotterdam, 1 cks. 10 cks. J. Rankine & Son		Rotterdam, 25 cks. J. Rankine & Son		Hamburg, 6 cks. 193 pgs.	
Phosphoric Acid—		Rotterdam, 1 cks. 10 cks. J. Rankine & Son		Chemicals (otherwise undistilled)		Hamburg, 10 cks. 4 cks.	

EXPORTS OF CHEMICAL PRODUCTS

OF

THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.			Ammonia (Liquid)—			Barium Chlorate—			Caustic Soda—		
Week ending June 12th.			B. Ayres, 9 c.			Rotterdam, 3 c.			Algoa Bay, 1 t. 25 t.		
Acids—			Ammonium Carbonate—			Borax—			E. London, 1 t. 1 t.		
Cape Town, 4 bgs.			Paris, 25 cks.			Auckland, 1 t. 1 c. 20 brls.			Lyttelton, 4 t. 2 t.		
Antwerp, 21 mtlays.			Ammonium Chloride—			Rockhampton, 1 t. 1 c. 20 brls.			Cape Town, 4 t. 2 t.		
Antwerp, 21 mtlays.			Rotterdam, 10 cks.			Calcium Hypophosphite—			Auckland, 5 t. 2 t.		
Antwerp, 21 mtlays.			Ammonium Sulphate—			Rotterdam, 3 c.			Sydney, 1 t. 10 t.		
Antwerp, 21 mtlays.			Callera, 25 t. 6 c.			Carbonic Acid Gas—			Melbourne, 3 t. 6 t.		
Antwerp, 21 mtlays.			Hamburg, 50			Barcelona, 10 tubes			Perth, 3 t. 3 t.		
Antwerp, 21 mtlays.			Cologne, 9 10			Caustic Potash—			Natal, 3 t. 3 t.		
Arsenic—			Cape Town, 25 dms.			Townsville, 1 t. 9 c.			Wellington, 3 t. 3 t.		
Cape Town, 10 t. 3 c.									Townsville, 3 t. 3 t.		
									Newcastle, 20 t. 6 t.		

(otherwise under.)—

Y.	6 cs. 10 drs.	£19
Y.	5 c.	13
Y.	5 t.	70
Y.	9 cs. 4 cks. 12 kgs.	147
Y.	20	21
Y.	18	30
Y.	20	65
Y.	41 pkgs.	123

of Lime—

Y.	2 t. 12 c.	£20
----	------------	-----

id—

Y.	10 c.	£70
----	-------	-----

Y.	1 ck.	6
----	-------	---

Y.	1.	31
----	----	----

Y.	10 kgs.	61
----	---------	----

Y.	5	32
----	---	----

Y.	61	61
----	----	----

Y.	13	13
----	----	----

Y.	2 t. 6	£310
----	--------	------

Products—**Oil**

Y.	10 drs.	£230
----	---------	------

Y.	6 cks.	60
----	--------	----

Acene

Y.	260 cks.	£1,655
----	----------	--------

Y.	269	1,190
----	-----	-------

Acid

Y.	80 cks. 52 drs.	943
----	-----------------	-----

Y.	6 cks.	£29
----	--------	-----

Y.	200	440
----	-----	-----

ote

Y.	100 cks.	£41
----	----------	-----

Y.	23,500 galls.	121
----	---------------	-----

Y.	928	406
----	-----	-----

thaline

Y.	53 pkgs.	£38
----	----------	-----

Y.	1,920 bgs.	190
----	------------	-----

Y.	270 cks.	£134
----	----------	------

Y.	1 cs.	6 brls. 5
----	-------	-----------

Y.	1,710 t.	2,995
----	----------	-------

Y.	1,577	2,700
----	-------	-------

Y.	850	1,700
----	-----	-------

Y.	500	283
----	-----	-----

Y.	50	25
----	----	----

Y.	500 bgs.	139
----	----------	-----

Y.	30 drs. 3 brls.	£10
----	-----------------	-----

Y.	50	12
----	----	----

Y.	60	12
----	----	----

Y.	810	28
----	-----	----

Y.	25 ms.	22
----	--------	----

Y.	10	10
----	----	----

Y.	10 tanks 1,000 dms.	151
----	---------------------	-----

ol

Y.	12 cks.	£102
----	---------	------

Sulphate—

Y.	7 t. 10 c.	£120
----	------------	------

Y.	1	15
----	---	----

Y.	5	4
----	---	---

Y.	47	796
----	----	-----

Y.	10	146
----	----	-----

Y.	5	80
----	---	----

Y.	25	408
----	----	-----

of Tartar—

Y.	10 c.	£35
----	-------	-----

Y.	10	38
----	----	----

Y.	2 t.	137
----	------	-----

Y.	4	295
----	---	-----

Y.	2	185
----	---	-----

Y.	10	78
----	----	----

Y.	1	69
----	---	----

ctants—

Y.	82 pkgs.	£60
----	----------	-----

Y.	55	74
----	----	----

Y.	55	11
----	----	----

Y.	1 t. 18 c.	70
----	------------	----

Y.	532 pkgs.	308
----	-----------	-----

Bay,

Y.	12 t.	£68
----	-------	-----

Y.	99	227
----	----	-----

Y.	10	110
----	----	-----

Y.	95	225
----	----	-----

Y.	3	33
----	---	----

Y.	3	30
----	---	----

Y.	15	225
----	----	-----

Y.	614	4,612
----	-----	-------

Y.	51	468
----	----	-----

Y.	742	6,406
----	-----	-------

Acid—

Y.	10 c.	£17
----	-------	-----

horus—

Y.	20 cs.	£194
----	--------	------

Y.	23	222
----	----	-----

Y.	2	19
----	---	----

Y.	10	146
----	----	-----

Y.	10 c.	£25
----	-------	-----

Y.	2 cs.	£22
----	-------	-----

Potassium Prussiate—

Y.	35 cks.	£609
----	---------	------

Y.	5 c.	17
----	------	----

Saltetre—

Y.	10 c.	£12
----	-------	-----

Y.	10	13
----	----	----

Y.	1 t.	23
----	------	----

Y.	2	57
----	---	----

Y.	18	41
----	----	----

Y.	3	81
----	---	----

Y.	4	103
----	---	-----

Sheep Dip—

Y.	250 drs.	£56
----	----------	-----

Y.	8 t.	232
----	------	-----

Y.	72 dms.	39
----	---------	----

Y.	9 cks.	70
----	--------	----

Y.	48	1,116
----	----	-------

Y.	6 c.	45
----	------	----

Y.	170	107
----	-----	-----

Y.	60	37
----	----	----

Y.	200 cs.	450
----	---------	-----

Y.	200	700
----	-----	-----

Soda—

Y.	2 t. 10 c.	£16
----	------------	-----

Soda Crystals—

Y.	1 t. 10 c.	£5
----	------------	----

Y.	7	17
----	---	----

Y.	20	45
----	----	----

Y.	6	15
----	---	----

Sodium Acetate—

Y.	4 t. 12 c.	£64
----	------------	-----

Sodium Bicarbonate—

Y.	1 t.	£19
----	------	-----

Y.	1	10
----	---	----

Sodium Hyposulphite—

Y.	1 t.	£7
----	------	----

Y.	20	115
----	----	-----

Sodium Prussiate—

Y.	18 cks.	£276
----	---------	------

Sodium and Potassium**Tartrate—**

Y.	5 c.	£15
----	------	-----

Sulphur—

Y.	10 brls.	£5
----	----------	----

Y.	5 t. 14 c.	33
----	------------	----

Y.	100 cks. 120 kgs.	149
----	-------------------	-----

Y.	8 t. 19 c.	132
----	------------	-----

Sulphuric Acid—

Y.	1 t. 13 c.	£18
----	------------	-----

Tartaric Acid—

Y.	3 c.	£15
----	------	-----

Y.	10	48
----	----	----

Y.	1 t. 12	130
----	---------	-----

Y.	1	93
----	---	----

LIVERPOOL.

Week ending June 12th.

Alkali—

Y.	83 t. 4 c.	£326
----	------------	------

Alum—

Y.	2 t. 14 c.	£13
----	------------	-----

Y.	3	20
----	---	----

Aluminous Cake—

Y.	5 t. 3 c.	£15
----	-----------	-----

Ammonia (Liquid)—

Y.	3 c.	£5
----	------	----

Ammonium Carbonate—

Y.	3	£8
----	---	----

Y.	1 t.	34
----	------	----

Ammonium Chloride—

Y.	3 c.	£6
----	------	----

Y.	2	8
----	---	---

Y.	1 t.	25
----	------	----

Y.	2	15
----	---	----

Y.	12	22
----	----	----

Y.	13	416
----	----	-----

Y.	1	26
----	---	----

Y.	1	36
----	---	----

Ammonium Sulphate—

Y.	30 t. 7 c.	£321
----	------------	------

Y.	5	51
----	---	----

Y.	101	1,076
----	-----	-------

Y.	17	298
----	----	-----

Y.	20	200
----	----	-----

Y.	106	1,086
----	-----	-------

Y.	40	469
----	----	-----

Y.	49	529
----	----	-----

Y.	49	498
----	----	-----

Y.	1	14
----	---	----

Y.	80	792
----	----	-----

Anhydrous Ammonia—

Y.	10 c.	£33
----	-------	-----

Antimony—

Y.	2 brls.	£2
----	---------	----

Y.	1 ck.	£2
----	-------	----

Arsenic—

Y.	10 t. 2 c.	1 q. £149
----	------------	-----------

Y.	19	22
----	----	----

Y.	8	8
----	---	---

Asbestos—

Y.	1 cs.	£21
----	-------	-----

Bleaching Powder—

Y.	23 cs.	£21
----	--------	-----

Y.	452 cks.	13 pkgs.
----	----------	----------

Y.	64	60 bxs.
----	----	---------

Y.	59	83 tcs.
----	----	---------

Y.	676	83 tcs.
----	-----	---------

Y.	34	83 tcs.
----	----	---------

Y.	20	83 tcs.
----	----	---------

Y.	72	83 tcs.
----	----	---------

Y.	58	83 tcs.
----	----	---------

Y.

1 cs.	8 cks.
50 cks.	
50 dms.	25 cks.
11	
(otherwise undescribed)	
30 cs.	7 cks.
3	45 100 pks.
2	4 18
8	1
1	
349 silbs.	1 10
10	
18 cs.	18 100 bgs.
50	5 pks.
18	434 pks.
1	50
25	130 pks.
5	
Oil—	
50 c.	
68	
21	
80	
2,000	
92	
201	
142	
40	
(otherwise undescribed)	
1 ck.	
48	1 cs.
1	20 dms.
1	
5	160 bgs.
Oil—	
102 c.	
17	
182	
618	
74	
7	
162	
142	
305	
221	
Colours—	
1 cs.	229 pks.
1 ck.	45 pks.
4 dms.	16
und.	20
gen.	12
inople.	20 pks.
1 cs.	17
1	41
1	30 dms.
4	
4	
1	
34	15
47	
3	
10	
316	
103	
30	
1	1
80	
9	
6	
110	
200	
rus—	
224 cs.	
25	
354 t.	
84	4 cks.
100 t.	
1 cs.	
70 cs.	
725	

Tallow—	
Norrkoping,	1 ck.
Stockholm,	24
Stockholm,	10
Tar—	
Amsterdam,	5 cks.
Copenhagen,	8
Dunkirk,	1
Gothenburg,	200
Helsingfors,	17
Hamburg,	5
Rotterdam,	1
Stettin,	6
Terra Alba—	
New York,	300 cks.
Treacle—	
Drontheim,	35 cks.
Varnish—	
Antwerp,	1 ck 10 dms.
Amsterdam,	3 2 cs.
Bergen,	2
Danzig,	1
Gothenburg,	1
Hamburg,	1 3
Rotterdam,	1
Stockholm,	1 1
Whiting—	
Hamburg,	10 bgs.
Rotterdam,	2 cks.

GLASGOW.

Week ending June 13th.

Acid—	
Bombay,	£38
Albumen—	
U.S.A.,	£71
Ammonia Salts—	
Bombay,	£40
Ammonium Chloride—	
Spain,	£120
Ammonium Sulphate—	
Cullera,	81 t. 15½ c.
Malaga,	50 12½
Valencia,	81 1
Hamburg,	10 12
Demerara,	182 1
Trinidad,	89 3½
Arsenic—	
Canada,	£31
Bleaching Powder—	
Melbourne,	£122
Boric Acid—	
Rotterdam,	£10
Borax—	
Christiania,	10 c.
Carbolic Acid—	
Christiania,	14½ c.
Germany,	5 t.
Riga,	£10
Caustic Soda—	
U.S.A.,	£200
Coal Products—	
Cresote Oil	
Christiania,	£15
U.S.A.,	35
Naphtha	
Rouen,	£40
Dieppe,	27 t. 10 c.
Pitch	
Antwerp,	£241
Bombay,	22
Gothenburg,	425
Canada,	41
Antwerp,	580 t.
Hamburg,	23 5 c.
Tar	
Bombay,	£116
Karachi,	67
Christiania,	
Rangoon,	5 t. 12 c.
Archangel,	20 brls.
Riga,	20
Copperas—	
Bombay,	34 t. 13½ c.
Dyestuffs—	
Cuteh	
Halifax, N. F.,	£52
Extracts	
Victoria,	£186
Melbourne,	29
Sydney,	28
Madder	
Melbourne,	£23
Iodine—	
Rotterdam,	£870
Lead Acetate—	
Bombay,	£82
Lime—	
Trinidad,	17 t. 17 c.

Linseed Oil—	
Adelaide,	4 t.
Litharge—	
Bombay,	£38
Montreal,	35
Magnesium Sulphate—	
Christiania,	10 t.
Manure—	
Cullera,	200 t. 5½ c.
Valencia,	203 13½
Trinidad,	52 14
Nitrate of Lead—	
Paris,	£160
Paint—	
Adelaide,	£125
Melbourne,	97
Kingston, Jam.,	66
Painters' Colours—	
Amsterdam,	£15
Melbourne,	50
Trinidad,	109
Algoa Bay,	23
Singapore,	30
Paraffin Wax—	
Genoa,	£312
Naples,	44
Palermo,	22
Rouen,	45
Christiania,	4 t.
Hiogo,	90
Plumbago—	
Bombay,	2 t.
Potassium Bichromate—	
Antwerp,	£364
Barcelona,	238
Bombay,	132
Genoa,	876
Karachi,	96
Leghorn,	78
Paris,	499
Rotterdam,	202
Victoria,	20
Potassium Prussiate—	
Yokohama,	£43
Sheep Dip—	
Sydney,	£130
Slag—	
Rotterdam,	435 t.
Soap—	
Demerara,	10 t.
Trinidad,	10 11 c.
Sodium Bichromate—	
Antwerp,	£170
Barcelona,	147
Bombay,	83
Genoa,	400
Lyons,	170
Paris,	80
Rouen,	168
Hiogo,	402
Sulphuric Acid—	
Demerara,	£20
Trinidad,	20
Rangoon,	253
Tallow—	
Christiania,	1 t. 4½ c.
Rotterdam,	17 18
Treacle—	
Gothenburg,	17 t. 12 c.
Christiania,	3 13
Rotterdam,	22 7
Bergen,	2 9½
White Lead—	
Sydney,	£45
Hong Kong,	62
Montreal,	175

TYNE.

Week ending June 8th.

Alkali—	
Antwerp,	5 t. 18 c.
Hamburg,	4 18
Rotterdam,	9 18
Amsterdam,	22 14
New York,	250
Bergen,	2 17
Ammonium Chloride—	
Gothenburg,	15 c.
Ammonium Sulphate—	
Stavanger,	5 t.
Antimony—	
Hamburg,	5 t.
Rotterdam,	16 1 c.
Asbestos—	
Bergen,	2 c.
Barium—	
New York,	5 t. 8 c.
Barytes—	
New York,	50 t. 13 c.

Bleaching Powder—

Gothenburg,	28 t. 3 c.
Genoa,	8 3
St. Petersburg,	50 8
Antwerp,	37 15
Hamburg,	75
Christiania,	22 9
Nykjobing,	2 10
Rotterdam,	12 19
Amsterdam,	47 18
New York,	50 3
Drontheim,	10 1
Borax—	
Ergasteria,	8 c.
Castor Oil—	
Christiania,	3 c.
Caustic Soda—	
Gothenburg,	15 t. 1 c.
Genoa,	22 18
St. Petersburg,	150 6
Antwerp,	5 2
Hamburg,	11
Odense,	1 9
Smyrna,	45 11
Amsterdam,	5 16
New York,	62 4
Drontheim,	3 9
Litharge—	
St. Petersburg,	18 t. 1 c.
Hamburg,	1 12
Christiania,	17
Oxalic Acid—	
New York,	1 t. 15 c.
Paint—	
Antwerp,	1 t.
Hamburg,	1 2 c.
Potash—	
Ergasteria,	12 c.
Soap—	
Arendal,	3 q.
Stavanger,	1 c.
Soda—	
Genoa,	8 t. 5 c.
Drontheim,	80
Antwerp,	5 2
Christiania,	21 16
Randers,	23 4
Rotterdam,	9 17
Smyrna,	26
Christiansund,	1 15
Amsterdam,	19 17
New York,	73 18
Ergasteria,	12
Soda Ash—	
Gothenburg,	93 t. 9 c.
Hamburg,	5 5
Smyrna,	10 10
Sulphate of Lime—	
Genoa,	10 t. 13 c.
Sulphur—	
Gothenburg,	25 t.
Skien,	150
Rotterdam,	100
Varnish—	
Christiansund,	2 t. 9 c.
White Lead—	
Gothenburg,	2 t. 16 c.
Oporto,	5 18
Christiania,	1 2
New York,	7 16

GOOLE.

Week ending June 5th.

Benzol—	
Hamburg,	48 cks.
Rotterdam,	49
Chemicals (otherwise undes.)—	
Ghent,	1 cs. 25 pks.
Coal Products (otherwise undes.)—	
Boulogne,	1 cs. 75 cks.
Rotterdam,	80
Manure—	
Ghent,	82 bgs.
Hamburg,	126
Pitch—	
Antwerp,	407 t.
GRIMSBY.	
Week ending June 8th.	
Chemicals (otherwise undescribed)	
Antwerp,	16 bts.
Hamburg,	5 cks. 3 cs.
Coal Products (otherwise undes.)—	
Dieppe,	161 cks. 3 cs.
Rotterdam,	16
Hamburg,	3
Dyestuffs (otherwise undescribed)	
Dieppe,	1 ck.

PRICES CURRENT.

WEDNESDAY, JUNE 19TH, 1895.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

Acids:—

	£	s.	d.
Acetic, 25 % and 40 %	per cwt.	6 1/3	& 9 1/3
„ Glacial	„	40/-	
Arsenic S.G., 2000°	„	0 15	0
Fluoric	per lb.	0 0	3 1/4
Muriatic (Tower Salts), 30° Tw.	per bottle	0 0	10
„ (Cylinder), 30° Tw.	„	0 3	0
Nitric 80° Tw.	per lb.	0 0	1 1/2
Nitrous	„	0 0	1 1/4
Oxalic	nett	0 0	3 1/4
Phosphoric, 1750°	„	0 1	1
Picric	„	0 0	10
Sulphuric (fuming 50 %)	per ton	15	10 0
„ (monohydrate)	„	5	10 0
„ (Pyrites, 168°)	„	3	0 0
„ 150°	„	1	5 0
„ (free from arsenic, 145°)	„	1	6 0
Sulphurous (solution) S.G. 1025	„	3	0 0
Tannic (pure)	per lb.	0 1	0
Tartaric	„	0 0	10 3/4
Arsenic, white powdered	nett per ton	15	0 0
Alum (loose lump)	„	4	12 6
Alumina Sulphate (pure)	„	4	12 6
Aluminoferrous	„	2	7 6
Aluminium	per lb.	0 2	10
Ammonia, Anhydrous	„	0 1	3
„ 880=28° B.	per lb.	0 0	3
„ =24° B.	„	0 0	2 1/4
„ Carbonate	nett	0 0	3 1/4
„ Muriate	per ton	21	10 0
„ (sal-ammoniac) 1st & 2nd	per cwt.	39/-	& 37/-
„ Nitrate	per ton	40	0 0
„ Phosphate	per lb.	0 0	8 1/2
„ Sulphate (grey) London	per ton	9	17 6
„ (grey) Hull	„	9	17 6
Aniline Oil (pure)	per lb.	0 0	5 1/4
Aniline Salt	„	0 0	4 3/4
Antimony	per ton	32	5 0
„ (tartar emetic)	per lb.	0 0	7
„ (golden sulphide)	„	0 0	10
Barium Chloride	per ton	6	7 0
„ Carbonate (native)	„	3	5 0
„ Sulphate (native levigated)	„	45/-	to 75/-
Bleaching Powder, 35 %	nett	7	0 0
„ Liquor, 7 %	„	3	10 0
Bisulphide of Carbon	„	13	0 0
Chromium Acetate (crystal)	per lb.	0 0	6
Calcium Chloride	per ton	2	2 6
China Clay (at Runcorn) in bulk	„	15/-	to 30/-

Coal Tar Products and Dyes:—

Alizarine (artificial) 20 %	nett per lb.	0 0	8
Magenta	„	0 3	9
Anthracene, 30 % A, f.o.b. London	per unit per cwt.	0 1	0 1/2
Benzol, 90 % nominal	per gallon	0 1	0
„ 50/90	„	0 0	11
Carbolic Acid (crystallised 40°)	per lb.	0 0	6 1/2
„ (crude 60°)	per gallon	0 1	7 1/2
Creosote (ordinary)	„	0 0	1 1/2
„ (filtered for Lucigen light)	„	0 0	2
Crude Naphtha 30 % @ 120° C.	„	0 0	5 1/2
Grease Oils, 22° Tw.	per ton	2	10 0
Pitch, f.o.b. Liverpool or Garston	„	1	13 0
Solvent Naphtha, 90 % at 160°	per gallon	0 1	1
Lucigen and "Wells" Oils	„	0 0	2 1/2
Copper	per ton	42	12 6
„ Sulphate	„	15	15 0
„ Oxide (copper scales)	„	41	10 0
Glycerine (crude)	„	16	10 0
„ (distilled S.G. 1250°)	„	42	10 0
Iodine	nett, per oz.	0 0	9
Iron Sulphate (copperas)	per ton	1	5 0
„ Sulphide (antimony slag)	„	2	0 0
Lead (sheet) for cash	„	11	10 0
„ Litharge Flake (ex ship)	„	13	5 0
„ Acetate (white)	„	24	10 0
„ „ (brown)	„	14	10 0
„ Carbonate (white lead) pure	„	16	0 0
„ Nitrate	„	18	15 0

Lime, Acetate (brown)	per ton	5	12 6
„ (grey)	„	8	10 0
Magnesium (ribbon and wire)	per oz.	0 1	1
„ Chloride (ex ship)	per ton	2	7 6
„ Carbonate	per cwt.	1	17 6
„ Hydrate	per ton	17	0 0
„ Sulphate (Epsom Salts)	per ton	3	0 0
Manganese, Sulphate	„	17	0 0
„ Borate	per cwt.	2	15 0
„ Ore, 70 %	per ton	4	5 0
Methylated Spirit, 61° O.P.	per gallon	0 1	10
Naphtha (Wood), Solvent	„	0 3	0
„ Miscible, 60° O.P.	„	0 3	0

Oils:—			
Cotton-seed	per ton	18	10 0
Linseed	„	23	0 0
Petroleum, American	per gallon	0 0	6 1/4
Stearine	per ton	25	10 0
Phosphorus (yellow)	per lb.	0 2	8
„ (red)	„	0 2	8
Potassium (metal)	per oz.	0 3	7
„ Bichromate	nett per lb.	0 0	4 1/2
„ Carbonate, 90% (ex ship)	per ton	16	15 0
„ Chlorate	per lb.	0 0	5
„ Cyanide, 98%	„	0 1	0
„ Hydrate (Caustic Potash) 80/85 %	per ton	21	5 0
„ (Caustic Potash) 75/80 %	„	19	15 0
„ (Caustic Potash) 70/75 %	„	19	10 0
„ Nitrate (refined)	per cwt.	1	1 6
„ Permanganate	per cwt.	2	17 6
„ Prussiate Yellow	per lb.	0 0	7 1/2
„ Sulphate, 90 % (ex ship)	per ton	9	15 0
„ Muriate, 80 % (do.)	„	8	10 0
Silver (metal)	per oz.	0 3	6 1/2
„ Nitrate	„	0 2	0
Sodium (metal)	per lb.	0 3	1 1/2
„ Carb. (refined Soda-ash) 48 %	nett per ton	4	15 0
„ (Caustic Soda-ash) 48 %	„	3	17 6
„ (Carb. Soda-ash) 48 %	„	3	15 0
„ (Alkali) 58 %	„	3	7 6
„ (Soda Crystals)	„	2	2 6
„ Acetate (ex-ship)	„	14	0 0
„ Arseniate, 45 %	„	11	0 0
„ Chlorate	per lb.	0 0	6 1/2
„ Borate (Borax)	net, per ton	18	10 0
„ Bichromate	per lb.	0 0	1 1/2
„ Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton	„	9	7 6
„ (74 % Caustic Soda)	„	8	7 6
„ (70 % Caustic Soda)	„	7	10 0
„ (60 % Caustic Soda)	„	6	10 0
„ (60 % Caustic Soda, cream) (f.o.b.)	„	6	7 6
„ Bicarbonate	„	6	10 0
„ Hyposulphite	„	5	10 0
„ Manganate, 30%	„	16	0 0
„ Nitrate (95 %) ex-ship Liverpool	per cwt.	0 8	1 1/2
„ Nitrite, 98 %	per ton	39	0 0
„ Phosphate	„	14	10 0
„ Silicate (glass)	per ton	4	10 0
„ (liquid, 100° Tw.)	„	3	10 0
„ Stannate, 40 %	per cwt.	3	2 6
„ Sulphate (Salt-cake)	per ton	0	17 6
„ (Glauber's Salts)	„	1	5 0
„ Sulphide	„	8	0 0
„ Sulphite	„	5	0 0
Strontium Hydrate, 100%	„	8	10 0
Sulphocyanide Ammonium, 95 %	per lb.	0 0	6 1/2
„ Barium, 95 %	„	0 0	4 1/2
„ Potassium	„	0 0	7
Sulphur (Flowers)	per ton	5	15 0
„ (Roll Brimstone)	„	5	0 0
„ Brimstone: Best Quality	„	3	12 6
Superphosphate of Lime (26 %)	„	2	7 6
Tallow	„	23	10 0
Tin Crystals	per lb.	0 0	5 1/2
„ English Ingots	per ton	66	0 0
Zinc (Spelter)	„	14	10 0
„ Chloride (solution, 100° Tw.)	„	5	7 6

THE CHEMICAL TRADE JOURNAL AND OIL, PAINT and COLOUR REVIEW.

Publishing Offices: 32, BLACKFRIARS STREET, MANCHESTER.

423.

SATURDAY, JUNE 29, 1895.

Vol. XVI.

Applications will open on TUESDAY, 2nd JULY, 1895, and will be closed on or before THURSDAY, 4th JULY, 1895.

LEVINSTEIN LIMITED.

Incorporated under The Companies Acts, 1862 to 1890.

SHARE CAPITAL.

per cent. Cumulative Preference Shares of £10	
Ordinary Shares of £10 each (£7 10 0 per Share up)	
£30,000	
£60,000	
£90,000	

The Preference Shares and 5,330 of the Ordinary Shares will be Shareholders of the Vendor Company in part payment of money, the Preference Shares as fully paid up, and the Ordinary Shares as paid up to the extent of £7 10s. 0d. per Share. The of both classes of Shares have been allotted, and are now in being paid up, the Preference Shares to the full amount, and Ordinary Shares to the extent of £7 10s. 0d. per share.

£70,000 4½ per Cent. First Mortgage Debenture Stock.

Stock is redeemable at par on 1st July, 1920, by the operation of Fund of £1,920 per annum, to be paid annually to the Trustees of the Debenture Stock Holders, and invested by them together with the interest. Power is reserved to the Company to pay off all or any of the Stock at a premium of 5 per cent. at any time after 1st July, 1900, the redemption being by drawings.

The Company has also power to acquire any of the Stock by purchase at the aforesaid premium.

Trustees for the Debenture Stock Holders.

NORTH OF ENGLAND TRUSTEE, DEBENTURE, AND ASSETS CORPORATION, LIMITED.

Directors.

WALMSLEY RADCLIFFE, Werneth Park, Oldham, Chairman of the North of England Trustee, Debenture, and Assets Corporation, Limited.
THEODORE BOTTINGER, Member of Prussian House of Parliament, Managing Director of Farbenfabriken vormals Friedr. Bayer & Co., Elberfeld.
ROWNLEE LONSDALE (J. & J. Lonsdale & Co.), Manchester, Chairman of the Manchester Corn, Grocery, and Produce Exchange, Limited.
LEVINSTEIN, Hawkesmoor, Fallowfield, Manchester, Managing Director.

Bankers.

MANCHESTER AND LIVERPOOL DISTRICT BANKING COMPANY LIMITED.

Solicitors.

ANDY, KERSHAW, SAXON, & SAMSON,
31, Booth Street, Manchester.

Auditors.

ARTHUR, MOSLEY, & CO., 45, Spring Gardens, Manchester.

Secretary and Registered Office.

JOHN WILSON, 21, Minshull Street, Manchester.

Manchester and Liverpool District Banking Company, at their Head Office, and in London, and at their branches, are authorised to receive Subscriptions at par, for Stock, payable as follows:—

£ 5 per cent on Application.	
25 " " Allotment.	
70 " " 1st August, 1895.	

£100

in full may be made on Allotment under a Discount of 3 per cent. per annum.

Stock will be Registered in the Books of the Company, and will be payable half-yearly on January 1st and July 1st.

1st. The first payment will be made on January 1st, 1896, and will be calculated from the due dates of the instalments.

The Debenture Stock and the Interest thereon will be secured by a First Mortgage to the Trustees for the Debenture Stockholders of the Freeholds now purchased by the Company, and by a first floating charge on the undertaking and other Property, present and future (but not including uncalled Capital) of the Company.

PROSPECTUS.

THIS Company is formed for the purpose of acquiring the well-known business of Manufacturing Chemists and Colour Manufacturers carried on at Crumpsall Vale Works, Manchester, by I. Levinstein and Co., Limited, in succession to the old established business previously carried on by Mr. Ivan Levinstein.

The Vendor Company was formed as a purely private Company in 1890, and it is now desired to establish it on a wider basis.

The security for the First Mortgage Debenture Stock includes the following:

Freehold Land, Water Rights, Buildings, Machinery, and Plant, valued by Mr. Richard Hoyle, of Bolton-le-Moors, at...	£81,060 10 0
Stock-in-Trade as on 31st May, 1895	39,198 15 6
Book Debts, as on 31st May, 1895	19,223 17 9
	£139,483 3 3

The following is a copy of the Certificate of Messrs. Ashworth, Mosley, and Co., Chartered Accountants, Manchester:—

"TO THE DIRECTORS OF I. LEVINSTEIN AND CO., LIMITED.

"The firm of Broome, Murray, and Co., and ourselves, have regularly Audited the Accounts of your Company since its formation in 1890; Messrs. Broome, Murray, and Co., for the year ended 31st December, 1890, and ourselves from that date to the 31st May, 1895.

We certify that the average annual net profits for the Five Years ended 31st December, 1894, were	£6,781 16 3
And for the Three Years ended 31st December, 1894	9,111 4 10
And that for the year ended 31st December, 1894, the net profits amounted to	12,288 2 8

We further certify that the net profits for the Five Months ended 31st May, 1895, were equal to the average for the year 1894.

In arriving at these profits there has not been any charge made for Interest on Borrowed Money, nor for Remuneration of the Managing Director, but there has been charged annually Depreciation at the following rates, viz:—

5 per cent. upon the Book value of the Buildings, and	
10 " " do. Machinery and Plant.	

In addition to this, considerable sums have each year been charged against the Trading in respect of Repairs to Machinery and Plant.

We are, yours faithfully,
ASHWORTH, MOSLEY, & CO.,
Chartered Accountants."

Manchester, 25th June, 1895.

To pay the Interest on the Debenture Stock will only require £3,150.

The confidence of the Members of the Vendor Company in the future of the business is shown by the fact that £20,000 of the Preference Share Capital is to be issued in equal moieties to the Farbenfabriken vormals Friedr. Bayer and Co. (Colour Manufacturers, formerly Friedr. Bayer and Co.), of Elberfeld, and the Actien Gesellschaft für Anilin Fabrikation (Aniline Manufacturing Company), of Berlin, and that the whole of the Ordinary Share Capital (£60,000), is to be issued to Mr. Levinstein, the two above-named Companies and Mr. Levinstein practically forming the old Company.

Where no allotment is made, the deposit will be returned in full. If the amount allotted is less than that applied for, the balance of the deposit will be applied towards payment of the amount due on allot-

ment. Failure to pay an instalment will render the previous payments liable to forfeiture.

Script, to be exchanged for definitive Certificates when ready, will be issued against Allotment Letters and Receipts.

Application will be made to the Committee of the Manchester Stock Exchange for a settlement and quotation in due course.

The Certificate of Messrs. Ashworth, Mosley, and Co., the Valuation of Mr. Richard Hoyle, and a print of the Trust Deed, can be seen at the offices of Messrs. Grundy, Kershaw, Saxon, and Samson.

Application must be made on the form enclosed with the prospectus, and sent with the deposit to the Bankers.

Prospectuses and Forms of Application may be obtained at the Offices of the Bankers and Solicitors to the Company.

June 27th, 1895.

CURRENT TOPICS.

OIL AS A MOTIVE POWER.

IT is very unfortunate that the prospects of oil as a motive power should be so hampered as they are at present. The trials of carriages propelled by oil and various other sources of power, recently made in France, have done much to draw attention to this matter. So much so that a Bill was introduced into Parliament, within the last few weeks, proposing to alter the law which exists in regard to any other than horse-power carriages. It may be asked why French enterprise is so much in evidence, while on our side apparently nothing is being done? The question can be answered in two ways. In the first place there is, in reality, no lack of enterprise, only there is no incentive to develop latent activity, to the production of results similar to those witnessed in France. To quote from our own columns the leading makers of gas engines are watching matters, and are prepared to place some first-class stationary and other types of engines on the market as soon as things have ripened.

There is every reason, therefore, to suppose that, placed on equal terms, we should not be long in asserting our claims to recognition as makers of oil-propelled carriages.

The other answer is that our law does not give engineers a chance. There is little need to expatiate on the advantages of oil-propelled carriages in outlying and country districts, especially when they combine mechanical simplicity with cleanliness, and freedom from noise and exhaust steam.

In spite of this, however, so long as this class of vehicle is treated by law as a locomotive the engineer is heavily handicapped. For instance, each carriage would have to be attended by three persons at least, one driving and the other two behind and in front respectively. Thus escorted, the speed must not be more than four miles an hour in the country and two in towns, while last, but by no means least, a licence of £10 is required for every county in which the carriage is to be used. The carriages tried in France attained a speed of from ten to fifteen miles an hour without disorganising ordinary traffic or frightening horses. This is more than can be said of our steam tram systems?

Taking one thing with another, therefore, it is hardly surprising that the French have the start of us in this field of engineering. The effort made by Mr. Shaw Lefevre to make a change for the better by introducing a Bill exempting such carriages from the Locomotive Act may, however, prove the first step towards regaining the ground we have, up to now, been compelled to lose. The Bill proposes to limit the weight of such carriage to two tons, and to make them subject to the same tax as ordinary carriages. When this change in the law is accomplished, we think there is little cause to fear that engineers will not be capable of providing suitable and efficient oil and other motors.

ANTICIPATIONS OF TROUBLE IN THE NITRATE INDUSTRY.

The meeting of the Lautaro Nitrate Co. held this week, has, not unnaturally, caused considerable interest, since this powerful company has been one of those whose refusal to the proposed terms has rendered the achievement of the Nitrate Combine an impossibility. The chairman's remarks were certainly full of interest, and in a large measure more candid than the majority of statements that usually fall from the chairmen of limited companies.

Mr. Ran does not hesitate to say that he sees the possibility of bad times for the nitrate industry, because, even though

the Combine be accomplished *pro tempore*, the reaction only be all the sharper when it does come.

He hangs his argument in fact on one of the points that emphasised some weeks ago. He virtually asks if it is possible for a Combine to be fair which proposes to run lines which are out of date in the light of recent advances in the industry. While so great efforts are being made to curtail production, the opening up of new ground is inevitably leading to its being increased. As the consumption is fairly constant, the net individual output under the proposed Combine will have to be less than under the old ones, and the Lautaro Company evidently objects.

The only way out of the difficulty seems to be to run the new ventures, or—as some appear to consider the interlopers, bear the brunt of the reduction in output, while the older companies concede a small additional aliquot of the total allowed them under the old combinations. Fortunately there is equal danger of the new ventures owing to such terms, and so frustrating any chance of effecting a Combine.

The long and short of it is that the nitrate industry beginning to suffer from the attacks of that veritable canker worm of excessive competition. Legitimate competition has been amenable to the control of the Combine but its more virulent congener often defies and defeats co-operation.

Considering all things, we are inclined to think that if the industry is to experience a "cutting" epidemic, it is constitutionally better able to withstand the attack now than will be in the course of a year or so. It is, therefore, an open question whether the Lautaro Company, by its apparent dog-in-the-manger attitude, may not, after all, be acting in the best interests of the industry.

Parliamentary Jottings.

COMPULSORY BOILER INSPECTION.

In the House of Commons, recently,

Mr. Holland asked the President of the Board of Trade whether in view of the large number of boiler explosions which had lately occurred causing great loss of life and destruction of property, he would consider the desirability of introducing a Bill making it compulsory on users to have their boilers duly inspected from time to time.

Mr. Bryce said he had no certain information as to the number of boilers in use in the United Kingdom, but, assuming it to be between 150,000 and 200,000, the proportion of explosions was now, as it was in 1871, about one in 2,000 per annum. In 1871 a Select Committee reported against compulsory inspection, one of the reasons given being that a great number of these explosions arose from causes independent of and apart from anything that could be prevented by periodic inspection. Having reference to that opinion and to the enormous magnitude of the task that would be thrown on the State were it to undertake the duty of periodical inspection, much consideration would be needed before introducing legislation in the direction indicated.

WELSH GOLD MINING.

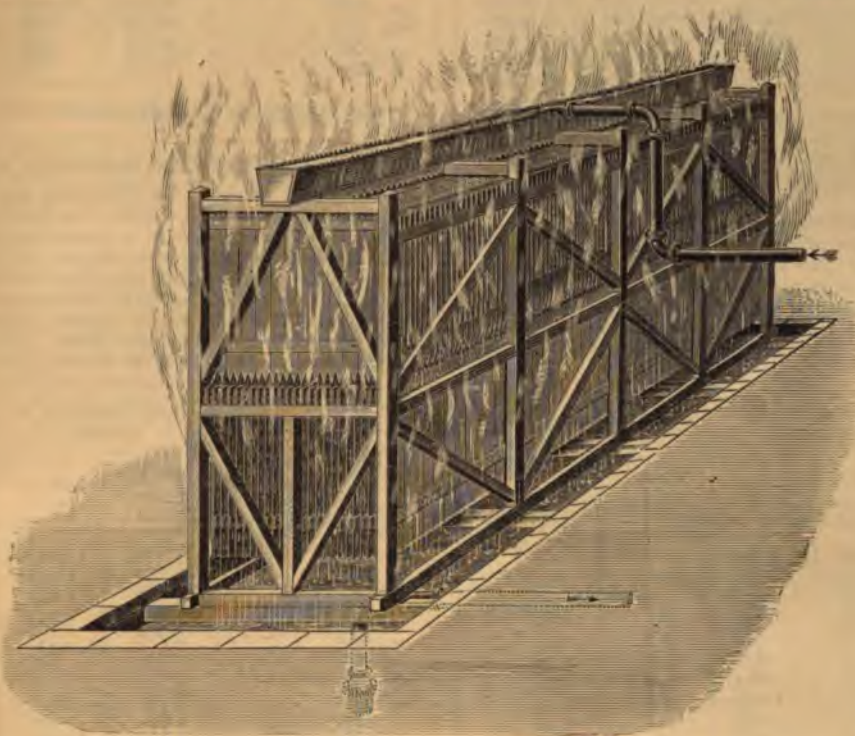
In answer to Mr. E. R. Jones,

The Chancellor of the Exchequer said: These accounts have not come in and cannot be given. Since 1887 2,270 tons of ore have been treated. The average yield of gold has been 10z. 18dwt. per ton, the total value of the gold £15,871. The royalties charged on private lands are less than those on lands where the Crown owns all minerals and not merely mines royal. The total tonnage of gold treated since 1887 is 46,795 tons; the average yield has been 11d total value, £88,566. The royalties received by the Crown have been £2,928. The sum of £2,928. has been received as dead rents while there has been no working, and £1,525. in fees. I cannot express opinion as to the gold in Carmarthen, but the same facilities would be given there as in Merioneth. In connection with other questions said: I have no hesitation in saying that, in my opinion, no more leases ought to be granted without effectual conditions to secure working of the minerals, so that the mining industry may be properly developed and employment found for the people in Wales. The system of granting take-notes for a year at a cost of £5., including survey fee and maps, has worked well and given general satisfaction. I do not thought well to grant leases for very small areas, as the character of the gold-bearing vein is very uncertain. He should be very willing to assist in securing the engagement of some experienced man to investigate the whole of this subject of gold production in Wales. Obviously of considerable importance,

WATER COOLING PLANT.

Larsen, of 19, Eastcheap, E.C., is placing upon the market his patent water coolers for use in connection with steam engines, and in such establishments as breweries, sugar and electricity works, &c. This cooler is constructed for cooling to a very low degree large quantities of water in a very small space. It is claimed by the makers that the cooler can be used for reducing the temperature of river water or for cooling of water from ice machines, which is now partly running to waste; for cooling of the heated condensing water from steam engines, which had to be worked without condensing, but can now be used into condensing engines without any cost whatever for water, as the same water is constantly used over and over again. It is claimed that the only working expense by the self-ventilating cooler is the cost of pumping the water to the top of same, and in connection with steam engines. The pump attached can be arranged to do the work where space is limited, the coolers are worked by means of a

connection with ice machines for some time, the weekly consumption of water was reduced from 1,125,000 gallons to 80,000 gallons, equal to a saving of not less than 1,045,000 gallons per week, and at 6d. per 1,000 gallons, this would be equal to £26. weekly. The action of the cooler is simple. The heated water is pumped to the top of the apparatus, about 16 feet high, in the interior of which is arranged a large number of wooden plates in a vertical position. The water is by means of a very simple arrangement divided over the whole surface of these plates, and flows slowly down same. By the contact with the large volume of air, which passes in the opposite direction through the cooler, the water will be very quickly lowered to the temperature of the air, and a further cooling, even as low as 20 to 25 degrees under the temperature of the air, is effected by the evaporation of a small quantity of water. In summer time this evaporation is much larger than in the winter, and consequently the water can, even on very hot days, be cooled nearly as low as on winter days, in spite of the great difference in the temperature of the air. A large cooler on this system is at work in London for cooling the condensing water from two 350 horse power steam engines. A great number of these coolers have been constructed up to the very largest dimensions, both in England and on the Continent, the largest apparatus working being employed for cooling the water from a steam engine of 3,000 horse



and the only additional cost is the power required for working steam engines this is more than regained by the better constant vacuum always maintained. The cooling medium is atmospheric air, and the degree to which the apparatus consequently limited, but even on very hot summer days the temperature can be reduced as far as 20% under the temperature of the air, and this cooling will generally be found all that is required. The cooling below the temperature of the air is produced by the evaporation of a small quantity—from 2 to 7% of the water passing through the apparatus. The following are some figures obtained from actual working:—Temperature of air 46°F; temperature of the hot water 71°, 68°, 60°; temperature of the cooled water, 59°, 53°, 39°; pressure in compressor 7 lbs., atm., 7-8, 7, 6½; loss of water, per cent., 5-7, 4, 2-3. These instances refer to ice machines, and the following are figures for condensing water from steam engines:—Temperature of cooled water, 69°, 46°; temperature of heated water, 122°, 113°, 104°; temperature of cooled water, 77°, 71°, 63°. In connection with steam engines, the apparatus can be worked as well for jet condensers as for ice condensers, and will, it is stated, maintain a perfect vacuum from 25 to 27 inches. A higher vacuum could be obtained, but would be in no proportion to the cost of doing so. In one instance on the Continent, where the apparatus has been at work in

power, with very satisfactory results. The illustration represents one of these self-acting coolers capable of supplying cooling water for a 250 horse-power engine.

THE STATE OF THE CHEMICAL TRADES.

THE coke trade is busy in Durham, but the chemical trade is reported as depressed. Cement and white-lead industries are slack. Salt workers about Middlesbrough are busy. The calico printing and dyeing trades round Accrington and Burnley are finding steady employment. In Northwich trade is bad with saltworkers. The glass and chemical trades at Widnes and St. Helens are bad. There is an improvement in the salt trade at Winsford, and things are reported better in the chemical trade at Middlewich. Just round Hull seed crushing is quiet, the mills mostly running short time. There is more activity in the paint and colour trade. The pulp and paper trades in Derbyshire are moderate. Oil, paint, colour and varnish makers, are busy at Wolverhampton and the West Bromwich Chemical trade is fully employed. The glass trade is much the same. Paper mills at Ipswich are slack. At most places the paint and colour trades about Bristol are brisk. At Swansea and district the chemical trade is quiet but steady; copper smelting is dull, but patent fuel works are actively employed.

THE FILTRATION OF SEWAGE EFFLUENTS.

THE following are the results obtained by Mr. Dibdin from a series of experiments on the filtration of sewage effluents during the years 1892 to March, 1895. The objects aimed at in the experiments are shown by the following classification:—(1.) Experiments with small filters and various filtering materials. (2.) Experiments with a 1-acre filter, using coke breeze only as material. The latter may be again sub-divided into—(a) Preliminary trials on velocity of passage, etc.; (b) experiments on biological lines; (c) experiments with doubled means of filling; (d) experiments with increased facilities for emptying; (e) experiments on recuperative power.

Scheme No. 1.

The tanks for filters used in the first series of experiments were built of wood, and were each equal in area to $\frac{1}{16}$ th part of an acre. They were four in number, and were filled with pea ballast, coke breeze, burnt clay, and a proprietary material (with gravel and sand) respectively. All four were worked at the same rates and during the same time. During the first six weeks sewage effluent was passed through at the rate of five gallons per square foot per day, whilst from the middle of July to the end of August the rate was reduced to one-half, or two gallons per square foot in 24 hours. The filtration was intermittently continued, the filters passing effluent constantly for 8 hours daily and resting during the remaining 16 hours, being allowed to run dry at the end of each day's work. The outlet valve was closed just sufficiently to keep the filter full, the effluent being level with the surface of the filter material.

Filter No. 1. Burnt Clay.—The material for this filter was obtained by burning clay taken from the marsh land adjoining, and was placed in the tank to a depth of 4 feet, the larger pieces being laid at the bottom, and the remaining smaller portions being placed above.

The whole quantity of effluent passed through amounted to 185,000 gallons, in a total of 240 hours, of which the filter worked 216 hours and rested 24 hours. The average rate, therefore, inclusive of rest periods, was 41,250 gallons per acre in 24 hours. The filtrate was sampled and analysed frequently, a sample of the crude effluent being also examined for the purpose of comparison, great care being taken that the two sets of samples corresponded, i.e., that the filtrate analysed represented the crude effluent.

Date, 1892.	Oxygen absorbed in 4 hours.		Albuminoid ammonia.	
	Crude effluent.	Filtrate.	Crude effluent.	Filtrate.
June 14th	3.311	1.631	—	—
" 15th	2.154	1.615	—	—
" 17th	1.909	1.518	—	—
" 21st	2.255	1.011	.250	.260
" 24th	2.205	.826	.230	.090
" 29th	.890	.509	.150	.130
July 7th	1.533	.805	.220	.090
" 8th	1.330	.770	.200	.130
" 11th	1.624	.812	.250	.250
" 13th	1.230	.371	.380	.230
" 15th	1.610	.875	.330	.140
" 18th	2.611	.448	.270	.090
" 20th	1.260	.770	.170	.120
" 22nd	2.415	1.246	.350	.130
Aug. 10th	2.198	.488	.230	.150
" 15th	1.351	.399	.260	.060
" 22nd	2.093	.868	.210	.120
Average purification effected=52.3 per cent.				

The purification effected by this filter was less than that attained by any of the remainder. The classification was also less than in the case of the pea ballast and proprietary filters, being exactly the same as obtained by the coke breeze. This was undoubtedly owing to the extreme looseness and porosity of the materials. The filtrate was free from peroxidative odour, smelling sweet for many months in either glass-stoppered or open bottles. No work of any kind was done on the sewage after the experiment started beyond filling up a few holes that leaked during the first week's running.

Filter No. 2. Pea Ballast.—This filter, of precisely the same form and dimensions as the last, was filled with Lowestoft shingle, of pea size. The classification effected in the filtrate was 75 per cent. more than in the case of the burnt ballast. The purification was also

greater, the reduction of oxidisable organic matter amounting to 52.3 per cent. The following table shows the several analyses made:—

Date, 1892.	Oxygen absorbed in 4 hours.		Albuminoid ammonia.	
	Crude effluent.	Filtrate.	Crude effluent.	Filtrate.
June 14th	3.311	1.631	—	—
" 15th	2.154	1.615	—	—
" 17th	1.909	1.518	—	—
" 21st	2.255	1.011	.250	.260
" 24th	2.205	.826	.230	.090
" 29th	.890	.509	.150	.130
July 7th	1.533	.805	.220	.090
" 8th	1.330	.770	.200	.130
" 11th	1.624	.812	.250	.250
" 13th	1.230	.371	.380	.230
" 15th	1.610	.875	.330	.140
" 18th	2.611	.448	.270	.090
" 20th	1.260	.770	.170	.120
" 22nd	2.415	1.246	.350	.130
Aug. 10th	2.198	.488	.230	.150
" 15th	1.351	.399	.260	.060
" 22nd	2.093	.868	.210	.120
Average purification effected=52.3 per cent.				

In the case of this filter also no renovation or alteration was needed.

Filter No. 3. Coke Breeze.—The filter was filled with coke breeze to a depth of 4 ft., and 3 in. of gravel was placed on the top to prevent the coke from floating. As far as clarification is concerned, this filter ranked just even with the burnt ballast; but the purification effected was higher than in the case of any of the other materials, the reduction of the oxidisable organic matter in solution amounting to 62.2 per cent. No renewal of the material was required, the only work done being the filling up of a few subsidence holes. The results of the various analyses made are set forth in the following table:—

Date, 1892.	Oxygen absorbed in 4 hours.		Albuminoid ammonia.	
	Crude effluent.	Filtrate.	Crude effluent.	Filtrate.
June 14th	3.311	1.442	.430	.120
" 15th	2.154	1.346	—	—
" 17th	1.909	1.431	.270	.120
" 21st	2.255	.233	.250	.070
" 24th	2.205	.352	.230	.080
" 29th	.890	.381	.150	.100
July 7th	1.533	.539	.220	.040
" 8th	1.330	1.050	.200	.070
" 11th	1.624	.609	.250	.110
" 13th	1.230	.294	.380	.160
" 15th	1.610	.511	.330	.100
" 18th	2.611	.448	.270	.140
" 20th	1.260	.560	.170	.140
" 22nd	2.415	1.183	.350	.110
Aug. 10th	2.198	.658	.230	.140
" 15th	1.351	.322	.260	.090
" 22nd	2.093	.728	.210	.110
Average purification effected=62.2 per cent.				

(To be continued.)

THE COMPRESSED GAS CYLINDER INQUIRY.—Professor Bly, Professor H. B. Dixon, Dr. Dupré, the Rev. F. J. Smith, and Professor Unwin, who have been requested by the Secretary of State for the Home Department to inquire into and report on the manufacture, filling, and use of gas cylinders, commenced their inquiry on Monday, at the Home Office. Professor Unwin was elected chairman. In the afternoon these gentlemen visited Brin's Oxygen Works. The inquiry was resumed on Tuesday, and Mr. Coxeter, Mr. Joseph Ralph, and Colonel Majendie laid their views before the committee.

The Patent List.

This list is compiled from Official sources in the Manchester Laboratory, under the immediate supervision of F. Davis and Alfred R. Davis, who report professionally value of Chemical Patents.

NOTIFICATIONS FOR ENGLISH LETTERS PATENT.

Fuel. F. C. Yeo. 11,333. June 10.
 Soap. P. F. Desgrandchamps. 11,367. June 11.
 Varnish. T. Coppock. 11,379. June 11.
 Agents in Carboy Hampers. C. Pottier. 11,405. June 11.
 Agents in Soap. M. H. Wilson. 11,411. June 11.
 Briquette Fuel. C. K. Morr. 11,438. June 12.
 Agents in Manufacture of Silica Bricks. F. H. Brooke. 11,459. June 12.
 Process for Electrolytic Extraction of Precious Metals. J. Y. Johnson. June 12.
 Gases. J. Maynes and C. L. Watchurst. 11,513. June 13.
 Sewage. J. J. Hood and A. G. Salamon. 11,517. June 13.
 Coal Gas. R. G. Shadbolt and J. W. Broadhead, of the firm of Munster and Sons, Ltd. 11,577. June 14.
 Soap Press. A. F. Beyer and A. G. Beyer. 11,606. June 14.
 Stone. G. de Bruyn. 11,622. June 14.
 Burs, etc., from Wool. F. J. Abbott, junr. 11,661. June 15.
 Process of Alkaline Metals. W. P. Thompson. 11,680. June 15.
 Kilns. A. W. Lundberg, J. O. Hollgren, V. S. L. Smith. 11,683. June 15.

ABSTRACTS OF LATEST COMPLETE SPECIFICATIONS.

Abstracts are specially prepared for the Chemical Trade Journal. RIGHTS of publication are RESERVED. This is the earliest abstracts of Chemical and allied patents accessible to the public.

Improvements in the manufacture of Ferrocyanides of Potassium and from their Sulphocyanides, and Apparatus relating thereto.—H. Ber, The Beeches, West Bromwich; E. C. Rossiter, Smethwick; J. J. Fenchurch Avenue, London; G. S. Albright, The Elms, Edgbaston. Eng. Pat. 10,032, April 26, 1894.

Improvements have reference to the production of alkaline cyanides from the corresponding sulphocyanides by fusing the same with metallic iron, and are intended to obviate the difficulties ordinarily attend this process through the presence of water in the cyanides, and of oxide in the iron employed. The damp sulphocyanide of potassium are fused at 450°–500°F. in a pot, and at the same time a current of inert gas such as nitrogen or lime gas is passed through the fluxed material. In this process mechanical agitation is unnecessary, but where the sulphocyanide is in under treatment, mechanical agitation must be employed, is preferable to pass the inert gas not through but simply over the surface of the pot. When clean, dry metallic iron in the shape of rods or filings can be obtained it is added to the sulphocyanide. The latter has been freed from water and is on the point of fusion, but when the iron to be employed is contaminated with water it is first treated with a soluble sulphide (to convert the oxide into a sulphide), and after being washed is added to the sulphocyanide. The latter has passed the stage of aqueous fusion. The proportions recommended are 65 parts of iron to 97 parts sulphocyanide of potassium, or 81 parts of the sodium salt. The drawings give details of furnaces, pots, and agitating arrangements.

Improved Process and Apparatus for the manufacture of Zinc Sulphates and Sulphides from Zinc Ashes, Zinc Blende, Carbonate of Zinc, and other ores of a complex nature, such as ores containing Lead, Zinc, Silver, Copper, Manganese, Iron, or other metals in solution.—A. Crossley, Cwmavon, near Pontypool, Monmouth. Eng. Pat. May 24, 1894.

Ores to be treated are subjected to a preliminary roasting to convert as far as possible the sulphides into oxides and sulphates, the process may be excepted in certain specified cases. The sulphur gases given off are collected and used in the preparation of sulphuric acid. The ores are then heated in a suitable cast iron or jacketed pan with sulphuric acid, the quantity being proportional to the metallic contents of the ores. The lead is thus rendered soluble. Water is now added in sufficient quantity to form soluble salts of the other metals, the solution of which is removed by filtration, leaving the lead (and silver and gold if any) ready for recovery by the usual metallurgical methods. The copper is next treated by treating the acid solution with H_2S or an alkaline solution; or by electro-deposition on zinc plates. The filtered liquor is neutralized with ammonia and chlorine gas passed through till the iron and iron are converted into per-oxides, and in turn precipitated by a slight excess of ammonia. The process up to this point is the same in all cases. The subsequent treatment depends on the nature of the salt to be prepared. In the case of zinc oxide, the precipitation of the manganic and ferric hydrates, excess of

ammonia is added to dissolve all the zinc oxide present, and the solution filtered. The oxide is obtained either by distilling away, and recovering the ammonia, or by neutralizing with acid, thus precipitating the oxide and forming a salt from which the ammonia is recovered by any well-known method. The precipitated oxide is heated in a muffle furnace described in detail in patents 12,813, 1891, and 2,618, 1894, until the desired body as a pigment is attained. The sulphide is obtained by precipitation with H_2S in an acid solution immediately after the iron and manganese have been removed by slight excess of ammonia. The sulphate is obtained at the same stage by filtering off the manganese and iron, acidifying and concentrating to the point of crystallization.

Improvements in the Manufacture of Sulphocyanides.—G. S. Albright, The Elms, Edgbaston, Birmingham; and J. J. Hood, 1, Fenchurch Avenue, London. Eng. Pat. 14,154. May 24th, 1895.

In the preparation of sulphocyanides by the inter-action of ammonia and carbon disulphide, the H_2S liberated, combines with a certain amount of ammonia, to form sulphide, instead of sulphocyanide. To obviate this, the inventors use a mixture of hydrated oxides of lime and magnesia. In a jacketed digester fitted with an agitator, suitable quantities of carbon disulphide and a solution of ammonia are placed, along with rather more MgH_2O_2 than is necessary to combine with the H_2S evolved, and rather less CaH_2O_2 than will combine with all the $HCNS$ formed. The whole is heated until the pressure rises to between 50 and 90 lbs. to the inch, and maintained thereat till the reaction is shown, by samples drawn and tested, to be complete. The reaction that takes place may be represented thus:— $MgH_2O_2 + CaH_2O_2 + 2NH_3 + 2CS_2 = MgH_2S_2 + Ca(CNS)_2 + 4H_2O$. By boiling at ordinary atmospheric pressure, the MgH_2S_2 is decomposed into H_2S , which is collected and used for making brimstone, or burnt into sulphur dioxide, and used in manufacture of sulphuric acid. The MgH_2O_2 precipitated is filtered off and used again in the process. The resulting solution of the soluble calcium sulphocyanide is treated with an alkaline salt to form an alkaline sulphocyanide. If an alkali such as potash is used in the place of lime, $KCNS$ is obtained direct. The second base can, if desired, be omitted, using magnesia only. In this case, the sulphocyanide of magnesia formed has to be decomposed eventually with lime or another alkali, forming a sulphocyanide with the latter, and precipitating magnesia ready for re-use. The chief advantage about the use of magnesia is the ease with which the sulphhydrate is decomposed on boiling, forming insoluble hydrate of magnesia and gaseous sulphuretted hydrogen, both of which can thus be readily separated and recovered.

Improvements in and connected with Electrolysis, and in Apparatus connected thereto.—E. Gautier, 54, Rue Lepic, Paris. Eng. Pat. 10,032, May 23, 1894.

The object is to keep the temperature of the electrolytic cell below the point at which undesirable compounds commence to be formed. Four drawings show a hollow cylindrical cathode revolving in a half-cylindrical anode. Water, or other cooling medium, is made to traverse the former and to pass in contact with the under side of the latter. The inventor claims to be able, by this arrangement, to produce calcium hypochlorite of any desired strength from calcium chloride, and even to manufacture peroxide of hydrogen.

SENSIBLE FINE FOR MILK ADULTERATION.—At Marylebone Police Court, last week, Benjamin Jones of College-place, Chelsea, was summoned at the instance of the Paddington Vestry for selling milk from which fifteen per cent. of cream or butter fat had been abstracted. Mr. Dennis prosecuted. It was shown that a man in the defendant's employ was stopped by one of the vestry's officers in Marlborough-street, Harrow-road, and a sample taken of the milk he was selling from a barrow bearing the name of the "Defiance Farm Dairy." The milk was submitted to the public analyst with the above result. The defence was that the milk was sold just as it was received from the farmer. A sample was forwarded to Somerset-house for an independent analysis to be made. It was now stated that the Somerset-house certificate showed a deficiency of twenty per cent. of cream. Mr. Dennis handed to the magistrate a bill, which he said had been distributed by the defendant throughout the district. The Bill was headed, "Defiance Farm Dairy," and advertised "Pure new milk at 2d. per quart, for one week only, and after that 2½d. per quart." The manager's name was given as "T. F. Stevens." Mr. Dennis asserted that this firm, under the name of Stevens, the Burlington Dairy Company, and the South-Eastern Dairy Company, had been convicted a great number of times, and on one occasion a fine of £20. was inflicted. The defendant said the bills referred to were old stock. He was purchasing the business from Mr. Stevens. Mr. Dennis remarked that that was merely a dodge. Mr. Curtiss Bennett fined the defendant £20., with £1. 13s. 6d. costs, with the alternative in default of distress of six weeks' imprisonment. The money was paid.

Trade Notes.

POSITION TO THE SALT UNION.—When the newly formed Salt purchased the salt works of the several then proprietors an agent was entered into with these latter that they should not commence other works of a similar character for a certain period of years. Time has now lapsed, and the atmosphere of Northwich is thick with new salt schemes. The Wincham Hall estate, at Lostock Gralam, the country seat of the Townshend family, is now being let out into new saltworks. The first works (those of Mr. Alfred Townson) are already a going concern, and the first "pan" has been started this week. Next to these works are those of Mr. Henry Ingram Townson, who will shortly start building, and a third are in the hands of Messrs. Rayner and Co., of Liverpool. The Canal Company, on the banks of which the various works are situated, are now busy with an extensive wharf, which, with the various boats mooring alongside, has completely altered the scenery of this part of the canal.

AT A DYEWORKE.—Late on Tuesday night a fire broke out in the dyeworks of Messrs. Kerr and Hoegger, Newton Heath, Manchester. The workmen on the premises at once set to work to subdue the fire. They were assisted by Engineer Peach, with the fire-engine from New-street, Newton Heath, and from Harpurhey. In an hour the danger was at an end. Fortunately the damage was confined to the dye-stuff in the room above the engine-house. Overheating is believed to have caused the fire.

LEVINE LTD.—This well-known firm of aniline dye manufacturers are, as will be seen from the prospectus in this issue, about to have the private limited concern which has up to now been carried on by Mr. Ivan Levine. The shareholders in the vendor company take 2,000 £10. preference shares, and 5,330 £10. ordinary in part payment of the purchase money. The preference to be paid up, and the ordinary up to £7. 10s. per share. An issue of £10. 4 per cent. first mortgage debenture stock is also made.

FLASH POINT INQUIRY.—The Home Secretary has agreed to the appointment of the Committee which last year heard evidence in connection with the question of petroleum oils. This year the committee will devote attention to oil lamps. About half the serious outbreaks of fire are due to lamps. The County Council has no power at present to supervise the kind of lamps used. No, but it has power to regulate the use of the oil. The future of this committee has, however, been rendered uncertain by the latest political collapse. Select Committees are to be re-appointed, but nothing is known about the others.

"SAFE" PETROLEUM.—The warm weather is showing how the thermometer rises to summer heat, petroleum of 73° flash point proves itself everything that can be desired—for the S.O. and 74°. Early on Monday morning a fire broke out at Barnham Buildings, Tooley-street, London, through the explosion of a gas lamp in apartments occupied by Charles Middleditch, a carpenter, whose daughter, Emma Middleditch, aged 15, was seriously injured and died at Guy's Hospital a few hours later.—Late on Saturday night a fire occurred at Amery-place, Smirk's-road, Old Kent-road, London, occupied by a man named Griffiths. A paraffin lamp overturned and the house was burned down.

BLACK SMOKE PROSECUTIONS.—At the Manchester Police Court, on Monday, a number of business firms were summoned in respect of the emission of black smoke from the chimneys of their respective works. John William Jones, trading as O. Ashworth and Company, 11, Market-street, was fined £5; Messrs. Thomas Hoyle and Sons, Ltd., 1, Market-street, London-road, £3; and a fine of twenty shillings was laid upon the following firms:—Taylor's Eagle Brewery Company, 1, Lloyd-street; Hamilton and Company, John Ryder and Sons, Ashton Old-road; Mr. Thomas Smethurst, trading as J. Smith and Sons, Eckroyd-street, Fairfield-street; and Galloways, Bennett-street, Hyde-road. Costs had to be paid in each case. Order for abatement was made in several cases. Mr. A. T. Rooke, Assistant of the Sanitary Department of the Corporation, appeared in support of the summonses.

CAMPBOR FAMINE.—One of the effects of the Chino-Japanese war has been to create something like a camphor famine. Hitherto the Chinese have been the chief providers of camphor, but the country has been so demoralised that the trade is greatly crippled, and it will be some time before it recovers itself. The price of this article has been rising at the rate of a penny or two per pound per day, and it is likely to reach a record figure. To day it costs from £7 to £8 per cwt., being dearer in China than in London, and if the war should bring dysentery and cholera to England, there is a possibility of the demand being in excess of the supply. The value of camphor as a remedial agent, and its utility in checking a number of diseases—from the most fatal form of Asiatic cholera to the less but yet dangerous influenza—is universally known. There need

not, however, be any occasion for alarm or uneasiness, as the famous non-poisonous disinfectant izar is a more effective agent than camphor in arresting and preventing disease even of the most virulent type; it is the most powerful germ-destroyer known to science, and is cheaper than camphor at the prices above mentioned.

MESSRS. MELDRUM BROS.—This firm is showing through their local agents, Messrs. Crosier, Stephen and Co., on Stand 321 in the Royal Agricultural Show at Darlington, a vertical boiler fitted with their patent forced draught. Several boilers in the Darlington district are fitted with this apparatus. At one works, for instance, a 50 n. h. p. loco type boiler, fired only with breeze recovered from a refuse heap, is working a 16" cylinder engine, driving half-a-mile of heavy belting; a pair of Fowler's 8½" winding engines; a 12" horizontal engine, and (when required) a 7" winch. For agricultural work the furnace is found to be of special value, enabling any kind of fuel to be used, and where smoke is an item is invaluable, as anthracite, coal, coke, or breeze can be used, and thus the smoke difficulty entirely overcome. The same firm is also the sole agent in the United Kingdom for Arndt's Oekonometer, an ingenious apparatus for automatically and continuously showing if the right amount of air is being admitted to a furnace so as to ensure complete combustion. This economising device is worthy of the attention of all users of furnaces and steam raisers. Particulars of the instrument were given in the *Journal*, No. 400. It can be seen working at their Atlantic Works, City-road, Manchester.

DIAMINE GREEN G.—This green answers very well for dyeing mixed silk and cotton goods. Cotton is best dyed with the addition of from 15% to 20% Glauber's salt. Diamine Green G going slowly and evenly on the fibre is well adapted for shading purposes. If it is to be combined with other Diamine Colours requiring an addition of alkalies, soda may be used. It may be dyed in copper vessels without the shade being influenced in the least. The fastness to washing of Diamine Green G is equal to that of the B mark, and can be essentially improved by treating the dyeings in a fresh hot bath with about 3% fluoride of chrome. The shade is only slightly altered by this treatment. In fastness to light and acids Diamine Green G is somewhat superior to the B brand. Unions (cotton and wool mixed goods) are best dyed with the addition of 3¼ ozs. Glauber's salt per gallon of water. Wool and cotton are dyed uniformly, so that this new product will undoubtedly prove of great importance for this industry. However, for cotton and silk mixed goods Diamine Green B is better adapted, it dyeing both these fibres more uniformly. For wool dyeing Diamine Green G is of interest owing to its good fastness to washing. Light shades are best dyed with the addition of from 10% to 20% Glauber's salt, dark ones with 10% Glauber's salt and 3% acetic acid. Chromed dyeings (boil the dyed wool for ½ hour with from ½ to 2% fluoride of chrome or bichromate of sodium) are distinguished by an excellent fastness to milling. Silk is best dyed in boiled off liquor acidulated with about 6% acetic acid.

RIVER POLLUTION CASES.—At the Liverpool Chancery Court, on Monday, before Vice-Chancellor W. F. Robinson, the case of Jackson v. I. Levine and Co., Limited, was heard. The plaintiff's firm, who are bleachers, dyers, and finishers, of Smedley Bridge Works, Cheetham, applied for an interim injunction to restrain the defendants, chemical manufacturers, of Crumpsall Vale, from polluting the river Irk by discharging coloured matter from their works. Mr. Maberley, instructed by Messrs. Ashworth and Inman, appeared for the plaintiff. Mr. Lawrence, instructed by Messrs. Grundy, Kershaw, and Co., appeared for the defendants. It was arranged that the case should stand over for a fortnight, the defendants agreeing to deliver their evidence by noon on Monday, and the plaintiff to have until Friday for reply. The defendants gave an undertaking that in the event of the result of the action being against them they should compensate the plaintiff for Corporation water which he might require to take.—The Swinton and Pendlebury Urban District Council were summoned recently at the instance of the Mersey and Irwell Joint Committee for causing and knowingly permitting liquid sewage to fall into the river Irwell. Mr. Wilson, of Preston, appeared for the Joint Committee, and Mr. Widdowson, solicitor, for the Urban Council.—Mr. Wilson said the offence was committed at the Pendlebury sewage works. On the 25th April Inspector Jephson visited the works, and found that sewage was passing through one of the four "settling" tanks and from thence directly into the river. Samples of the sewage were taken and submitted for analysis to Sir Henry Roscoe. The facts of the case were not in dispute.—Mr. Widdowson said that on the day in question it had rained very heavily. The man in charge of the tanks, thinking that there would be more rain while he was off duty for a short time, left one of the valves of the tank open. There was no intention on the part of the Urban Council to permit sewage to flow into the river.—Mr. Yates imposed a fine of 20s. and costs in each case.—The 3rd July was provisionally fixed for the hearing of a summons against the Manchester Corporation, at the instance of the Mersey and Irwell Joint Committee, in respect of the pollution of Gore Brook.

RE-LIGHTING SAFETY LAMPS.—The following is a new method of re-lighting a miner's safety lamp without unlocking, which is due to Mr. Atherton. Attached to the lamp is a charge containing six ordinary lucifer matches. On the light being extinguished the miner could at once ignite one of the matches in the attachment, and so re-light the lamp. Safety, simplicity, and moderate cost were claimed for the invention, which, we understand, has not been tested in inflammable gaseous mixtures so far.

Market Reports.

REPORT ON MANURE MATERIAL.

The market continues very quiet, and there is very little disposition on the part of manure makers to purchase at present level of prices.

Florida 75/80% phosphate rock offers at 6½d. per unit, c. i. f. to good United Kingdom ports. For Peace River rock the quotation is 6d. per unit, for South Carolina River rock 5¼d. to 5½d., and for Algerian of the same grade 5½d. per unit is about the value.

There is still inquiry for River Plate bones, and cargoes of handy size would fetch 4s. 5s. per ton, delivered good United Kingdom ports. Latest sale of crushed Kurrachee bones was at 4s. 7s. 6d. per ton, and that price would probably still be business for shipment. Sellers still ask 4s. 10s. for Bombay bone meal, but less would have to be taken to induce business.

Nitrate of soda is quiet but steady both on spot and forward. Spot value is 8s. 3d. to 8s. 4½d. per cwt. for good to refined. Autumn shipments are worth 8s. 4½d. to 8s. 6d. per cwt., according to position.

TAR AND AMMONIA PRODUCTS.

Benzols keep dull. In carbolic acids there is practically no change, both crude and crystals continuing in fair request at last quotations. Naphthas are steady with a slight increase, in solvent to 1s. 2d. Anthracene and cresote are unaltered. Pitch steady at 37s. to 37s. 6d., f.o.b., East Coast.

Sulphate of Ammonia is steady. The prices are to-day quoted lower than at the beginning of the week. Values, however, are virtually nominal. Makers are firm, especially for forward, which has been done in the North at 4s. 10s. Current prices are:—London, 4s. 17s. 6d.; Liverpool, 4s. 17s. 6d.; Hull, 4s. 15s. to 4s. 17s. 6d., and Leith, 4s. 16s. 3d.

HULL PAINT, OIL, AND COLOUR REPORT.

TUESDAY.

OILS.—The demand is somewhat checked, buyers anticipating stocktaking for the half-year ending this week, consequently values are disposed to be lower all round. During the week the imports have been 35,838 qrs. of linseed, viz.: From River Plate, 32,462 qrs.; Riza, 1,500 qrs.; St. Petersburg, 1,126 qrs.; and Libau, 750 qrs. The imports of cottonseed have been 666 tons from Alexandria, 1,480 tons from Mersyne, 1,152 tons from Smyrna, and 175 tons from Pernambuco. The imports of rapeseed have been 2,421 qrs. from Kurrachee. Linseed oil has declined about 10s. per ton, the closing value on the spot being about 20s. 7½d. naked; month, 20s. 6d.; July-Aug., 20s. 3d.; and Sept.-Dec., 19s. 1½d. Boiled and refined from 1s. 10s. to 1s. 2s. per ton extra. The export for the week has been 2,020 cwt. Refined cotton oil quiet, at 16s. 6d. naked, spot; July-Aug., 16s. 9d. sellers; and Nov.-April, 17s. Crude, on the spot, offers at 14s. 10½d. naked. Olive oil unchanged. Spirits of turpentine, 23s. Cod oil continues scarce, especially common sorts. Boiled drying oil, 12s. per ton. Liquid scouring soap, for wool dressing, 15s. per ton. Castor oil, first pressure, 2½d. per lb. Soft soap, 14s. 6d. per cwt.

CAKES.—Linseed cakes quiet: 95% pure, 4s. 6s. per ton; Russian, 4s. 17s. 6d. Oil cakes, 4s. 5s. to 4s. 7s. 6d. Cotton cakes, a very small demand; best makes, 4s. 17s. 6d. to 4s. 4s.; seconds, 4s. 15s. Rape cakes unaltered.

PAINTS.—The trade is not quite so active as at the early part of the month. The dullness is only of a temporary character, and will no doubt clear away with the month. Ready-mixed paints, in various sized lever tins, from 2s. 4s. per ton Venetian red, oxide of iron, green, blue, and black paints from 11s. per ton. White and red leads unchanged. Dry colours unchanged. Imperial black varnish, 4s. per ton in barrels. Vermillionettes from 4d. per lb. upwards. Ultramarines, dry, from 3d. to 8d. per lb. Paint remover, from 25s. per cwt. Oak varnish from 5s. 6d. per gallon.

TYNE CHEMICAL REPORT.

TUESDAY.

Chemicals are in quiet demand, and there is no alteration to be seen in prices. Caustic, 76/77%, scarce, at 4s. 10s. per ton f.o.b.; 77. 15s. Sulphur, 4s. 17s. 6d. per ton. Soda crystals, 4s. 17s. 6d. per ton gross weight, locally. Most of the Tyne works are closed week on account of the annual local holidays.

Bleaching powder, softs, 4s. 5s. per ton, nett; hard, 4s. 10s. per ton, nett; caustic soda, 76/77%, 4s. 10s. per ton, nett; do., 70%, 4s. 7s. per ton, nett; recovered sulphur, 2 cwt. bags, 4s. 17s. 6d. per ton, nett; soda ash, 48%, 4s. 12s. 6d. per ton, nett; do., 52%, 4s. 17s. 6d. per ton, nett; do., 56%, 4s. 10s. per ton, nett; alkali, 36%, 4s. 2s. per ton, nett; white alkali, 48%, 4s. 10s. per ton, nett; do., 50%, 15s. per ton, nett; do., 52%, 4s. 5s. per ton, nett; hyposulphite of soda, 5-7 cwt. casks, 4s. 6s. per ton, nett; do., 1 cwt. kegs, 4s. 12s. per ton, nett; silicate of soda, 75° Tw., 4s. 12s. 6d. per ton, nett; do., 100° Tw., 4s. 3s. per ton, nett; do., 140° Tw., 4s. 7s. per ton, nett; soda crystals, casks, 4s. 17s. 6d. per ton, gross weight; do., 2 cwt. bags, 4s. 17s. 6d. per ton, nett; chlorate of potash, 5¼d. per lb., less 6%; pearl harden 4s. 3s. per ton, nett; pure white sulphate of alumina, 4s. 2s. per ton, nett; blanc fixe, 4s. 10s. per ton, nett; chloride of barium, 4s. 10s. per ton, nett; carbonate of alumina, 4s. 2s. 15s. per ton, nett; aluminate of soda, 4s. 33s. 15s. per ton, nett; in 5 ton lots, 4s. 10s. per ton, nett.

SALT.—South Durham salt is 9s. to 9s. 6d. per ton, f.o.b. T with fair shipments.

COALS.—The coal trade is rather dull, but as the local holidays this week will interfere with the supply, prices are likely to be maintained. There is a good demand for best Northumbrian steam, and more than one colliery the "turns" are full for a week or two. Best Northumbrian steam, 8s. 9d. per ton; second quality, 7s. 6d. 7s. 9d. per ton; small steam, 3s. 3d. to 3s. 6d. per ton; gas coke quiet, at 6s. to 7s. per ton; bunker coals, 6s. 3d. to 7s. 3d. per ton; coke steady, at 13s. to 14s. 6d. per ton.

MISCELLANEOUS CHEMICAL MARKET.

Trade in general chemicals has been rather quiet during the week. Bleaching powder is difficult to move, and prices have a slight weaker tendency. We quote 4s. 17s. 6d. softwood on rails, and 3s. 9d. hardwood, f.o.b. Caustic soda continues quiet at former prices. Soda ash has rather more inquiry, but quotations are all in its favour. Nitrate of soda is only in limited demand at prices run from 4s. 2s. 6d. to 4s. 7s. 6d., according to quality. Sulphur copper fairly active at 15s. 10s., f.o.b. Chlorates of soda and potash in small request, and without change in price. Yellow Prussian potash flat at 7½d. White powdered arsenic scarce, and in demand at 15s. at Garston. Acetates generally are showing slight improvement. Soda is not nearly so plentiful, and 15s. c.i.f. may be taken as average value to-day. Lime, brown and grey, is in request, both for prompt and forward. Sulphocyanides moderate active. We quote: ammonium 7d., barium 5d., sodium 5½d., potassium 7½d., alumina 2s. 6d., oxalic acid 3½d. per lb. Ammonia oil good demand, and prices are firm. Carbonate, 3½d. Grey Man 4s. 22s. 10s. Carbolic acids are in steady request, and prices are at 1s. 7d. for 60's crude, and 6½d. for 39/40 crystal.

THE METAL MARKETS.

LONDON, WEDNESDAY.—Pig iron, dull: Scotch warrants at 43s. 9d. Middlesbrough 35s. 4d. cash, and hematite 43s. 11d. Copper, steady: Chili bars, G. O. B.'s and G. M. B.'s, closed 42. 8s. 9d. to 42. 13s. 9d. cash, and 42. 15s. to 42. 43 three months. Tin, steady: Straits closed at 62. 5s. to 62. 15s. cash, and 62. 1 to 63. three months; Australian, 63; English ingots, 66. 1s. steady; Spanish, 10. 2s. 6d.; English, 10. 7s. 6d. Silicious and ordinary, 14. 11s. 3d. Nickel, 1s. 1½d. Antimony, 32. 9d. silver: first hands, 47. 10s.; second hands, 47. 8s. 4d. shares, steady: Cape, 1½ to 2½; Copiapo, 2 to 2½; Libiola, 1 to 3½; Mason and Barry, 2½ to 2¾; Rio Tinto, 15½ to 15 Tharsis, 4½ to 4¾.

GLASGOW, WEDNESDAY.—Market better, with moderate business. Scotch done at 43s. 9d. and 43s. 10d. cash, also at 43s. 11d. and 4 one month; closing with buyers at 43s. 9d. cash, sellers ask 43s. 10d. Cleveland closes with buyers at 35s. 4d. cash, sellers ask 35s. 10d. Cumberland hematite closes with buyers at 43s. 11½d. cash, sellers 44s. 0½d. Middlesbrough hematite closes with buyers at 42s. cash, sellers ask 42s. 5½d.

LIVERPOOL OIL AND COLOUR MARKET.

WEDNESDAY.

—Palm oil is quiet. There has been a fair amount of business last week's price for Lagos, to arrive. Grand Bassa, Dixcove, and pond have been moving at £18. and £18. 5s., all transit. nothing offering in olive, and prices remain as last quoted. keeps firm, at 23s. per cwt. for Liverpool makes in export Cottonseed is steady, at 18s. 3d. to 19s. for Liverpool refined, to 18s. 3d. for American. Castor oil is rather quiet, sellers' station being 2½d. to 2¾d. for good seconds Calcutta; first French, 2½d. to 2¾d. per lb. Tallow is quiet, with very fine. Resin keeps firm, with a fair amount of activity in at 4s. per cwt., and other grades at proportionate prices. of turpentine are very firm, at 23s. per cwt.; to arrive is lower prices, down to 22s. 6d. Petroleum enjoys a strong for American, at 6¼d. to 8½d., and Russian refined 6d. per

DURS are steady, without alteration in prices. Oxfordshire, common, £10., medium, £12., best, £15. ire, common, 40s.; medium, 50s., best, 60s.; Welsh, best, 50s., and common, 18s.; Irish, Devonshire, 40s. to 50s.; J.C., 60s. to 65s.; M.C., 65s. to 67s. 6d. UMBER: quiet; Devonshire, 50s. to 55s. White lead, £16. Red lead, Venetian red, £6. to £10. Cobalt: Prepared oxide, black, 9s.; blue, 6s. Zaffres: No. 1, 3s. 6d.; No. 2, Oxide of iron: Common, £7.; medium, £10.; finest, £20. de, £22. 10s. to £25.

WEST OF SCOTLAND CHEMICALS.

GLASGOW, TUESDAY.

g the past week the outlook for the products of the Scottish oil and paraffin manufacture has further brightened, consequent dowed reports from America of a straightened production of m there. The sinking of new wells has been largely gone into, ion to the active stimulation of wells still going, but not so ily as formerly, and yet, according to the reports, production is erially increased. Scotch burning oil is, therefore, very firm at uotations, and is not unlikely to advance before the time of ing against next winter's supplies comes round. Paraffin spirit a) has risen to 6d. for prompt supplies (used for manufacturing e, dyeing, paint mixing, &c.), while more is asked for forward e. Sulphate of ammonia continues unusually stationary, though y weakening slightly, at least for prompt, the quotation for now £9 17s. 6d. to £10. Last week forward business was £10. 10s. In general chemicals, though, stocks are by no excessive, and the industrial annual holidays are at hand. rather more of weakness, but no price changes of any note. prices current are:—Soda crystals, 35s. to 37s. 6d. nett, Tyne; h, 48/52°, £3. 15s. to £4. 10s. nett, Tyne; white alkali, £4. 10s. to £5. 5s. nett, Tyne; alum in lump, £5. 10s. nett, e; caustic soda, white, 74° £9., 70/72° £7. 15s., 60/62° e, and cream 60/62° £6. 10s., all nett, Liverpool; bleaching £6. 5s. to £7., nett, Tyne; saltcake, 17s. 6d.; borax, English £20., and boracic acid, £30. nett, Glasgow; bicarbonate of cwt. casks, £6. 10s., and 1-cwt. casks £6. 15s. nett, Liverpool;

bichromate of potash, 4½d. nett, for Scotch and English deliveries (for export, 4½d. nett, f.o.b. Glasgow); bichromate of soda, 3¼d. nett, for Scotch and English deliveries (for export, 3½d. nett, f.o.b. Glasgow); chlorate of potash, 5d. less 5%, Liverpool; nitrate of soda, 8s. 3d. to 8s. 6d.; sulphate of ammonia, £9. 17s. 6d. to £10. prompt f.o.b. Leith; sal ammoniac, first and second white, £39. and £37. nett, any port; sulphate of copper, £15. 12s. 6d., less 5%, Liverpool; paraffin scale, hard, 2½d.; and soft, 1½d. to 2¼d. per lb.; paraffin wax 120° semi-refined, 2½d. to 2¾d.; paraffin spirit (naphtha), 6d. per gallon; paraffin oil (burning), No. 1 6½d., and crystal 6¾d., at works, for Scotch buyers (English sales 1d. lower); ditto (lubricating) 865° £4. 5s.; 885° £4. 10s. to £5., and 890/895° £5. to £5. 10s. Week's imports of sugar at Greenock were 5,420 baskets cane unrefined.

New Companies.

Messrs. Foster Bros. (Gloucester), Ltd.—CAPITAL, £100,000., £10. shares. This company has been formed to take over and carry on the business of oil-seed crushers, oil refiners, and oilcake manufacturers, etc. The subscribers to the memorandum of association are:—T. N. Foster, Oil Mills, Gloucester, merchant; R. G. Foster, Oil Mills, Gloucester, merchant; N. B. Foster, Oil Mills, Gloucester, merchant; R. F. Foster, Oil Mills, Gloucester, merchant; Mrs. R. G. Foster, 2, Spa Villas, Gloucester; Miss L. M. Foster, Allt Dinas, Bagshill, Cheltenham; Miss E. A. Foster, Allt Dinas, Bagshill, Cheltenham.

Fibre Cleaning Co., Ltd.—CAPITAL, £10,000., in shares of £1. each. This company has been formed to deal in fibre producing plants and fibre cleaning machinery. The subscribers to the memorandum of association are:—J. J. Weicher, 3, Beresford-terrace, Highbury, engineer; J. A. Ollard, Enstone, East Molesey, solicitor; F. T. Goodman, 59 and 60, Broad-street Avenue, E.C., merchant; R. R. Garratt, 59 and 60, Broad-street Avenue, E.C., merchant; W. J. Boycott, 28, Norroy-road, Putney, gentleman; W. H. R. Judd, 208, Wightman-road, Hornsey, accountant; J. G. Hill, 180, Tufnell Park-road, N., gentleman.

Perfect Pavement Co., Ltd.—CAPITAL, £5,000., in £100 shares. This company has been formed to manufacture and deal in paving slabs, cement, plaster of Paris, artificial stone, etc.

QUERY.

A correspondent asks information about the kind of boiling pan that is generally used for evaporating a solution of manganese sulphate to dryness.—Replies should be sent to "Pink," care of the *Journal*.

ANSWERS TO CORRESPONDENTS.

A.H.—This week is the first issue.

X.—We now have as many as we want.

S.P.—They are in course of preparation. Due notice of their appearance will be given.

AQUA.—It is quite possible, an analysis would soon settle the point.

PLUMBUM.—(1) Yes. (2) You are forgetting the concentration which takes place. This puts another complexion on the matter altogether.

IMPORTS OF CHEMICAL PRODUCTS

AT THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

LONDON.

week ending June 15th.

Acid—
Hd, 159 pkgs. A. & M. Zimmermann Beresford & Co.
210
ie—
ny, 1 pkge. Stein Brs.
ium—
ny, £59 H. Lambert
ony—
lia, 56 t. Vivian, Younger & Co.
ony Ore—
rkey, 35 t. French & Smith
ore, 8 t. H. Grey, jun.
y, 5 H. Bath & Son
os—
d, £9 Philipps & Graves

Barytes—
Holland, 23 cks. O Hara & Hoar Beresford & Co.
Belgium, 34 S. H. Willoughby
Holland, 2 Randall Brs.
" 23 Moreton, Cox & Brs.
" 57 J. L. Lyon & Co.
Bleaching Soda—
Germany, 71 c. H. Lambert
Camphor—
Germany, 1 pkge. L & I. D. Jt. Co.
" 10 T. H. Lee
Caoutchouc—
E. Indies, 275 c. E. Boustead & Co. Kleinwort Sons & Co.
" 29
U. States, 58 Fisher, Renwick & Co.
France, 2 H. Johnson & Sons
" 88 L. & I. D. Jt. Co.
Zanzibar, 24 Arbuthnot, Ewart & Co.
" 46

Germany, 40 W. Balchin
Madagascar, 20 Procter Brs.
E. Indies, 309 Huttenbach & Co.
Madagascar 40 Hammond & Co.
" 2 L. & I. D. Jt. Co.
E. Indies, 75 Brookes & Green
Madagascar, 3 Kleinwort, Sons & Co.
" 30
France, 11 Hale & Son
Zanzibar, 30
Carbolic Acid—
Belgium, 90 pkgs. W. G. Blagden
Castor Oil—
France, 66 brls. Lucas & Spencer's Wf. Ltd.
" 25 Anderson, Weber & Smith
Belgium, 49 Fuerst Brs.
" 20 J. T. Morton
E. Indies, 30 cs. W. Balchin
Caustic Potash—
France, 45 c. F. J. Putz & Co.
" 29 cks. Carey & Sons

Holland, 163 c. J. M. Steel & Co.
Belgium, 50 J. A. Reid
" 100 Petri Brs.
Chemicals (otherwise undescribed)
Germany, 84 pkgs. A. & M. Zimmermann
France, 2 Ross & Deering
Germany, 84 T. H. Lee
" 13 L. & I. D. Jt. Co.
" 50 T. Palmer
Denmark, £10 Tegner, Price & Co.
Holland, 9 F. Boehm
" 4 Philipps & Graves
" 11 J. Owen
Germany, 8 J. Alexander
" 5 W. J. Crook
Holland, 12 Anderson,
" 18 Weber & Smith
Carey & Sons
Chrome Ore—
Australia, 72 t. Blackwell, Sons & Co.

Citrate of Lime — Italy, 24 pkgs. Thames S. T. & L. Co.	U. States, 4,969 11,629 R. G. Hall & Co.	E. Indies, 1,312 bgs. Lucas & Spencer's Wf. Co.	Aniline Dyes — Paris, 25 cks.
Copperas — Germany, 11 pkgs. A. & M. Zimmermann " 32 City Coml. Wf.	" 250 1,425 Deering & Robottom " 50 300 Williams, Torrey, & Co. " 100 600 L. Suro & Co.	Soda — Holland, 4 c. G. Rahn & Co. Soda Ash — Holland, 6,900 c. R. Waters Belgium, 2,400 "	Antimony — Boston, 1 bbl. Antimony Ore — Antofagasta, 150 sks. L. Linn " 129 A. Gibb & Co. " 541 " 147
Cream of Tartar — Holland, 15 pkgs. Kirkpatrick & Co. France, 5 B. & F. Wf. Co. Spain, 11 W. C. Bacon & Co.	" 300 1,800 Soundy & Sons France, 150 150 Barrett, Tagant, & Co. U. States, 500 480 L. & N. W. Railway	Sodium Sulphate — Holland, 12 pkgs. Corbyn, Stacey, & Co.	Asbestos — Colon, 1 cs. Genoa, 2 bgs.
Dextrine — Germany, 300 pkgs. Ross & Deering	Glue — " 4511	Starch — U. States, 200 pkgs. Oswego Co. Holland, 60 G. Rahn & Co. France, 40 A. Dunn Belgium, 42 A. B. Curtis & Co. Holland, 228 Taylor Brs. " 170 Philipps & Graves " 100 Seaward Brs.	Barytes — Rotterdam, 45 cks.
Dyestuffs — Annatto E. Indies, 18 pkgs. Brown & Elmslie Holland, 4 R. J. Fullwood & Bland	Magnesia — Holland, 50 pkgs. Beresford & Co. Magnesium Sulphate — Germany, 80 pkgs. Berger, Kahler & Co.	Germany , 330 Holland, 1,971 Little & Johnston Belgium, 995 T. H. Lee " 60 Union L. Co. " 1,057 F. Claydon & Co. Germany, 1,220 Horne & Co. Belgium, 130 Leach & Co. " 700 Prop. Scott's Wf. Holland, 570 Magee, Taylor, & Co. A. Starck	Bone Ash — Zarate, 502 bgs. J. Nel " 517
Anthracene Holland, 167 pkgs. Burt, Boulton & Co.	Manganese Ore — Germany, 1 t. Craven & Co.	France , 120 Mordaunt Brs. " 50 Walbaum & Tosetti " 50 Lucas & Spencer's Wf. Co.	Bone Meal — Bombay, 3,502 bgs.
Argols Italy, 365 pkgs. B. Jacob & Sons " 63 Thames S. T. & L. Co.	Manure — Cape, 435 t. D. de Pass & Co. Sydney, 5 A. Gibbs & Sons Germany, 10 Charles & Fox " 51 Co-op. L. Association. Ltd.	Belgium , 344 H. Hill & Sons France, 63 C. S. Lovell " 100 H. Hill & Sons	Boracic Acid — Leghorn, 12 cks. Pickford & Co. " 30 4 bbls.
Cutch E. Indies, 1,000 pkgs. Ross & Deering " 24 R. & J. Henderson	Methyl Alcohol — Belgium, 2 dms. H. Lorenz " 1 Stein Brs.	Sulphur — France, 11 t. Fuerst Brs.	Borax — Antofagasta, 780 sks.
Extracts France, 50 pkgs. E. & F. Wf. Co. U. States, 495 L. & I. D. Jt. Co. Denmark, 14 Sorensen & Co.	Aden , 50 Perkins & Homer " 4 Culverwell, Brooks, & Co.	Talc — E. Indies, 403 L. & I. D. Jt. Co.	Borax — Valparaiso, 923 bgs. A. Henry
Germany , 402 J. Sinclair & Son " 200 Fnerat Brs. U. States, 100 J. Knill & Co. " 100 Skilbeck Brs.	Sydney , 200 A Hunter & Co. Holland, 5 H & E. Albert	Tartaric Acid — France, 8 pkgs. B. & F. Wf. Co. Italy, 28 Holland, 62 Kirkpatrick & Co. " 10 B. & F. Wf. Co.	Camphor — Hamburg, 2 cs.
Gambier E. Indies, 24 pkgs. E. Boustead & Co. " 218 J. Swire & Sons " 226 Beresford & Co. " 243 W. France & Co. " 237 R. & J. Henderson " 219 Perkins & Homer	Molasses — U. States, 40 cks. 237 c. C. J. Capes & Co. " 50 280 J. Newcomb	Ultramarine — Holland, 4 cs. W. H. Carey & Sons Belgium, 2 cks. W. Harrison & Co. Holland, 15 pkgs. Haeflner, Hilpert, & Co.	Castor Oil — Calcutta, 1,000 cs. Ralli Leghorn, 30
Indigo E. Indies, 29 cts. Parry & Co. " 2 R. Von Glehn & Sons " 67 Park, Macfadyen & Co. " 5 Elkan & Co. " 7 Ross & Deering " 2 Arbuthnot, Latham & Co.	Paraffin Wax — U. States, 1,664 bbls. Anglo-American Oil Co.	Belgium , 14 Leach & Co. Germany, 10 cs. Steinhoff, Sons, & Co. Holland, 22 bbls. G. Rahn & Co.	Chemicals (otherwise unclassified) Philadelphia, 18 cs. Baltimore, 50 cks.
Logwood Jamaica, 25 pkgs. G. T. Benton & Son	Phosphate Rock — Germany, 30 t. Hammond & Co. France, 210 A. Hunter & Co.	White Lead — Holland, 8 cks. J. Owen France, 11 S. H. Willoughby " 19 J. Watt & Sons Belgium, 75 bbls. J. L. Lyon & Co. Germany, 48 cks. Randall Bros. " 14 W. A. Rose & Co. " 6 Steadman & Sons " 30 S. H. Willoughby	Colours — Hamburg, 10 cs. Ghent, 2 pkgs. Fletcher & Co. " 4 lds. 13 cs.
Madder Holland, 1 pkge. Major & Field	Pitch — N. Russia, 1,059 cks. Fellows, Merton, & Co. Germany, 58 bbls. C. B. Leighton France, 46 cks. C. S. Lovell " 5 T. H. Lee	Wood Pulp — Holland, 357 bbls. C. S. Lovell Norway, 40 C. Christophersen Germany, 203 W. Friedlander Belgium, 1,519 F. Claydon & Co. Germany, 37 Thames S. T. & L. Co. Norway, 476 C. S. Lovell Sweden, 5,782 Henderson, Craig, & Co.	Cottonseed Oil — New York, 197 bbls. N. Orleans, 150
Naphthalene Germany, 34 pkgs. Flemings Oil Co.	Plumbago — Ceylon, 62 bbls. Cayzer, Irvine, & Co. Germany, 3 cks. Beck & Pollitzer Ceylon, 254 bbls. R. G. Hall & Co. Germany, 37 cks. B. Gallaway	Sweden , 366 W. G. Taylor & Co. Norway, 910 Holland, 160 Johnsen & Jorgensen Norway, 1,800 W. E. Bott & Co. Holland, 2,400 J. Sharp Holland, 168 Henderson, Craig, & Co. Sweden, 366 W. G. Taylor & Co.	Creosote — Bordeaux, 225 cks. Philadelphia, 25 bbls. Baltimore, 25
Holland , 4 Philipps & Graves	Potash — Canada, 146 c. S. Ward France, 100 F. W. Berk & Co.	Germany , 1,519 F. Claydon & Co. Germany, 37 Thames S. T. & L. Co. Norway, 476 C. S. Lovell Sweden, 5,782 Henderson, Craig, & Co.	Creosote — Bordeaux, 225 cks. Philadelphia, 25 bbls. Baltimore, 25
Shumac Italy, 400 pkgs. J. R. Scott	Potassium Bicarbonate — Holland, 12 cks. Beresford & Co.	Germany , 1,519 F. Claydon & Co. Germany, 37 Thames S. T. & L. Co. Norway, 476 C. S. Lovell Sweden, 5,782 Henderson, Craig, & Co.	Creosote — Bordeaux, 225 cks. Philadelphia, 25 bbls. Baltimore, 25
Tanner's Bark Melbourne, 22 t. Baxter & Hoare Natal, 59 pkgs. A. & W. Nesbitt	Potassium Carbonate — Holland, 394 c. W. G. Blagden France, 80 J. A. Reid " 75 F. J. Putz & Co. Germany, 42 cks. Perkins & Homer France, 498 c. Carey & Sons	Germany , 1,519 F. Claydon & Co. Germany, 37 Thames S. T. & L. Co. Norway, 476 C. S. Lovell Sweden, 5,782 Henderson, Craig, & Co.	Creosote — Bordeaux, 225 cks. Philadelphia, 25 bbls. Baltimore, 25
Adelaide , 1 W. Allison & Co.	Potassium Prussiate — Holland, 14 pkgs. Williams, Torrey, & Co.	Germany , 1,519 F. Claydon & Co. Germany, 37 Thames S. T. & L. Co. Norway, 476 C. S. Lovell Sweden, 5,782 Henderson, Craig, & Co.	Creosote — Bordeaux, 225 cks. Philadelphia, 25 bbls. Baltimore, 25
Hong Kong , 200 pkgs. W. M. Smith & Sons	Potassium Sulphate — Holland, 22 cks. H. Johnson & Sons " 100 pkgs. F. W. Berk & Co. France, 28 A. G. Boyes	Germany , 1,519 F. Claydon & Co. Germany, 37 Thames S. T. & L. Co. Norway, 476 C. S. Lovell Sweden, 5,782 Henderson, Craig, & Co.	Creosote — Bordeaux, 225 cks. Philadelphia, 25 bbls. Baltimore, 25
E. Indies , 50 City Coml. Wf. Co.	Pumice Stone — Italy, 10½ t. O'Hara & Hoar	Germany , 1,519 F. Claydon & Co. Germany, 37 Thames S. T. & L. Co. Norway, 476 C. S. Lovell Sweden, 5,782 Henderson, Craig, & Co.	Creosote — Bordeaux, 225 cks. Philadelphia, 25 bbls. Baltimore, 25
" , 104 G. & H. Green	Quicksilver — Spain, 10 bbls. L. & I. D. Jt. Co. Italy, 500 "	Germany , 1,519 F. Claydon & Co. Germany, 37 Thames S. T. & L. Co. Norway, 476 C. S. Lovell Sweden, 5,782 Henderson, Craig, & Co.	Creosote — Bordeaux, 225 cks. Philadelphia, 25 bbls. Baltimore, 25
" , 341 Dalton & Young	Rosin — U. States, 500 bbls. Prod. Brokers' Co. " 100 H. Hill & Sons	Germany , 1,519 F. Claydon & Co. Germany, 37 Thames S. T. & L. Co. Norway, 476 C. S. Lovell Sweden, 5,782 Henderson, Craig, & Co.	Creosote — Bordeaux, 225 cks. Philadelphia, 25 bbls. Baltimore, 25
Valonia A. Turkey, 20 t. A. & W. Nesbitt " 18 J. Graves " 53 Aming & Cobb " 58 Hicks, Nash & Co.	Saltpetre — Germany, 70 cks. T. Merry & Son " 57 J. D. Hewett & Co. " 40 J. Hall & Son	Germany , 1,519 F. Claydon & Co. Germany, 37 Thames S. T. & L. Co. Norway, 476 C. S. Lovell Sweden, 5,782 Henderson, Craig, & Co.	Creosote — Bordeaux, 225 cks. Philadelphia, 25 bbls. Baltimore, 25
Farina — Holland, 100 pkgs. Ohlenschlager Brs. " 200 Seaward Brs.	Saltpetre — Germany, 70 cks. T. Merry & Son " 57 J. D. Hewett & Co. " 40 J. Hall & Son	Germany , 1,519 F. Claydon & Co. Germany, 37 Thames S. T. & L. Co. Norway, 476 C. S. Lovell Sweden, 5,782 Henderson, Craig, & Co.	Creosote — Bordeaux, 225 cks. Philadelphia, 25 bbls. Baltimore, 25
Glucose — U. States, 500 pkgs. 500 c. Devitt & Hett " 1,000 1,000 Fellows, Morton, & Co. France, 400 400 L. Norman & Co., Ltd. U. States, 500 500 G. Clark & Son " 5,500 5,500 Pearce, Pelly, & Co. " 50 300 T. I. Lipton " 50 285 J. Keiller & Son, Ltd. " 250 1,425 Seaward Brs., Ltd. " 50 300 Union L. Co., Ltd.	Saltpetre — Germany, 70 cks. T. Merry & Son " 57 J. D. Hewett & Co. " 40 J. Hall & Son	Germany , 1,519 F. Claydon & Co. Germany, 37 Thames S. T. & L. Co. Norway, 476 C. S. Lovell Sweden, 5,782 Henderson, Craig, & Co.	Creosote — Bordeaux, 225 cks. Philadelphia, 25 bbls. Baltimore, 25

LIVERPOOL.

Week ending June 13th.

Acetic Acid — Rotterdam, 5 bbls.	
Albumen — Lisbon, 4 cs. D. Medley & Son	
Hamburg, 16 cks.	
Naples, 12 bgs. 1 bbl.	

Gelatine—

Paris, 2 cs.

Glucose—

New York, 350 bbls.

Boston, 750

Baltimore, 200

Glue—

Rouen, 45 cks.

W. & A. Society

Nazaire, 4
erdam, 45 bgs.
on, 50 crts. 1 cs. T.
Robinson & Sons

o—
ana, 100 bls.
cha Is., 1,542 t. Banking
Syndicate of London

stone—
it, 3 cs.
erp, 1 J. T.
Fletcher & Co.

rge—
rdam, 7 cks

al—
Cruz, 3,335 bgs. Bessler,
Waechter & Co.

illes, 19 cks.
n, 81 R. J. Francis
& Co.

aux, 30
n, 174 Co-op. W'sale
Society, Ltd.

erp, 5

Acid—
rdam, 14 cks.

York, 14 cs. J. S. Nickel
& Son

in Scale—
York, 300 brls. Thompson
& Bedford

ore, 100

hate—
erp, 510 t.
t, 500 bgs.

n, 10 bxs. 2 bls.

h—
real, 17 brls. Makin &
Bancroft

n, 42 cks. Co-op. W'sale
Society, Ltd.

urg, 29

ie Stone—
rm, 10 cs.
na, 29 82 pkgs.

IS—
na, 1,310 t. Matheson & Co.

ick, Ga., 5,050 brls

ngton, 2,773

n, 1,035

ore, 200

urg, 500 sks.

tre—
urg, 25 kgs.

illes, 30 cs.

n, 44

leans, 12 H. Churubici
R.

York, 100 bxs. Crooks & Co
Deaver & Steny

rm, 600 P. Behrends
63 crts.

s, 28 8co Boot's Pure
Drug Co

delphia, 7 D. C.
Keeling

ntinople, 100

na, 162

rdam, 6 brls.

n Acetate—
n, 8 cks. R. J.
Francis & Co.

t—
York, 400 bgs.
30 cs. Dawson & Co.

urg, 208

rp, 301 J. T. Fletcher
& Co

rdam, 161

n, 110 brls. 100 bxs.

ore, 400

ne—
rp, 70 bgs.

IF—
ia, 900 bgs. 83 brls.

t—
na, 687 cks.

na, 182 pps. 90 hf-pps.

n, 180 J. Nelson & Sons,
Ltd.

Tar—
Wilmington, 1,210 brls.

Tar Oil—
Rotterdam, 10 cks.

Tartar—
Bordeaux, 26 cks.
Naples, 1

Tartaric Acid—
Hamburg, 2 cks.

Treacle—
New York, 60 brls.
" 16 Maple Syrup
Co.

Philadelphia, 1,500

Turpentine—
Brunswick, Ga, 750 cks.

Ultramarine—
Hamburg, 20 cks.

Varnish—
Ghent, 1 pkge. J. T. Fletcher
& Co.

" 1 bl

Waste Salt—
Hamburg, 260 t. 1 500 bgs.

White Lead—
Antwerp, 15 cks.
Rotterdam, 32

Wood Pulp—
Christiania, 4,562 bls. Henry Tyrer
& Co

Gothenburg, 13 Tullis & Co.
" 7 G. Schenkenwald
& Co.

Zinc Ashes—
Marseilles, 12 cks.
Constantinople, 50 bgs.

Zinc Oxide—
Antwerp, 37 brls.
Rotterdam, 25 cks.

MANCHESTER.

Week ending June 15th.

Acetanilide—
Rotterdam, 10 cs.

Albumen—
Antwerp, 5 cs.
Hamburg, 1

Aniline Oil—
Rotterdam, 8 brls.

Antimony—
Treport, 2 cks.

Barytes—
Antwerp, 50 bgs.

Colours—
R'tterdam, 5 bxs. 33 cks. 70 cs. 75 brls.
Ghent, 6 4
Hamburg, 6 2 pkgs

Cream of Tartar—
Rotterdam, 8 cks.

Dyestuffs—
Alizarine
Rotterdam, 1 ck.
Extracts
Rotterdam, 24 cks.
Treport, 35

Farina—
Rotterdam, 170 bgs.
Hamburg, 255

French Chalk—
Treport, 6 cs.

Glue—
Rotterdam, 20 bgs. 3 cs.
Treport, 15 cks. 68 bls.
Hamburg, 45 4

Lead Acetate—
Rotterdam, 34 cks.

Limestone—
Antwerp, 1 cs

Litharge—
Rotterdam, 4 cks.

Manganese Ore—
Huelva, 1,414 t.

Oxalic Acid—
Rotterdam, 14 cks.

Pitch—
Rotterdam, 24 cks.

Potash—
Rotterdam, 10 cks.

Starch—
Hamburg, 800 cs.

Tartar Emetic—
Hamburg, 10 cks.

Tartaric Acid—
Rotterdam, 10 cks. 2 brls.

Ultramarine—
Hamburg, 9 cks. 1 cs.

Waste Salt—
Hamburg, 60 kgs. qty.

Wood Pulp—
Halifax, 4,480 bls. Kenny, Mahon,
& Co.

" 8,584 bds.

Zinc Oxide—
Rotterdam, 20 brls.
Jaffa, 10 cks.
Antwerp, 110

Zinc White—
Rotterdam, 19 cks.
Treport, 25

HULL.

Week ending June 15th.

Acetate—
New York, 1,599 bgs. Wilson,
Sons, & Co., Ltd.

Acid—
Leghorn, 7 brls.

Aniline Colours—
Hamburg, 10 cks. Sissons Brs.
& Co.

Arsenic—
Hamburg, 10 brls. Wilson, Sons,
& Co., Ltd.

Asbestos—
Rotterdam, 1 ble Hutchinson
& Son

Genoa, 15 Wilson, Sons,
& Co., Ltd.

Barytes—
Antwerp, 56 cks. 20 bgs. Bailey &
Leatham

Bremen, 22 H. F. Pudsey
100 bgs. G. Holmes
& Co.

" 22 cks.
Rotterdam, 20 W. & C. L.
Ringrose

" 120 100 bgs
178 Hutchinson & Son

Antwerp, 2 cks. Bailey
Bone Meal— & Leatham

Castor Oil—
Leghorn, 6 cs.
Genoa, 60 Wilson, Sons,
& Co., Ltd.

Marseilles, 1

Chemicals (otherwise undescribed)
Bremen, 2 kgs. 1 cs. Veltmann
& Co.

Hamburg, 50 5 cks. Wilson,
Sons, & Co., Ltd.

Leghorn, 10 cks. "

Dunkirk, 3 1 dm. Wilson,
Sons, & Co., Ltd.

Antwerp, 28 pks. 5 brls. Wilson,
Sons, & Co., Ltd.

Rotterdam, 1 ck. Hutchinson
& Son

Cod Oil—
Bergen, 16 brls. Wilson, Sons,
& Co., Ltd.

Drontheim, 31
Aalesund, 110 cks. "

Colours—
Hamburg, 22 cs. G. Malcolm
& Son

Ghent, 9 cks. Wilson,
Sons, & Co., Ltd.

Stettin, 27
Hamburg, 8 cs. "

Genoa, 1 brl. "

Rotterdam, 2 6 7 cks. 8 pks.
Hutchinson & Son

" 11 cks. 3 25 pks. W. &
C. L. Ringrose

Antwerp, 3 Wilson, Sons,
& Co., Ltd.

" 2 cks. Bailey &
Leatham

Cream of Tartar—
Rotterdam, 2 cks. Hutchinson
& Son

Cryolite—
Copenhagen, 2 cks. Wilson, Sons,
& Co., Ltd.

Dextrine—
Stettin, 100 bgs. Wilson, Sons,
& Co., Ltd.

Dyestuffs—
Alizarine
Rotterdam, 23 cks. W. & C. L.
Ringrose

" 15 brls. Hutchinson
& Son

Logwood
Norroping, 100 bls. H. Briggs,
Sons, & Co.

Hamburg, 517 pcs. 25 bgs. Wilson,
Sons, & Co., Ltd.

Madder
Rotterdam, 1 ck. Hutchinson
& Son

Yalonia
Marathonisi, 143 t.

Farina—
Hamburg, 100 bgs. Wilson,
Sons, & Co., Ltd.

100
Harlingen, 690
Ghent, 315 cs. "
Stettin, 500 "

Glucose—
Rotterdam, 40 bgs. Hutchinson
& Son

New York, 500 brls. Wilson,
Sons, & Co., Ltd.

" 399 250 bgs.

Glue—
Rotterdam, 40 bgs. Hutchinson
& Son

Christiansund, 1 brl. Wilson, Sons,
& Co. Ltd.

Hamburg, 86 bgs. 40 cks. G. P. Lawson
Wilson, Sons,
& Co., Ltd.

" 10 cks. "

Dunkirk, 5

Manganese Chloride—
Bremen, 4 cks.

Manure—
Ghent, 200 t. 500 bgs. Wilson,
Sons, & Co., Ltd.

Naphthol—
Rotterdam, 2 cks. W. & C. L.
Ringrose

Ochre—
Marseilles, 139 cks.

Plumbago—
Leghorn, 60 bgs. Wilson,
Sons, & Co., Ltd.

Genoa, 153

100

Potash—
Rotterdam, 1 ck. Hutchinson
& Son

Pumice Stone—
Leghorn, 5 cs. 25 cks. 12 bgs. Wilson,
Sons, & Co., Ltd.

" 10
Marseilles, 1

Rosin—
Bordeaux, 28 cks.
Rotterdam, 6 Hutchinson & Son
Savannah, 1,000 brls. G. & J.
Rawstorn, Ltd.

Saltpetre—
Rotterdam, 135 bgs. Hutchinson
& Son

Soap—
Marseilles, 14 cs. Wilson, Sons,
& Co., Ltd.

" 1

Soda—
Rotterdam, 8 cks. Hutchinson
& Son

Starch—
Antwerp, 200 cs. Bailey &
Leatham

Bremen, 2 009 Veltmann & Co.
Antwerp, 148 Wilson, Sons,
& Co., Ltd.

Rotterdam, 112 Hutchinson & Son

Stearine—
Antwerp, 13 bgs. Bailey &
Leatham

Christiania, 20 brls. Wilson,
Sons, & Co., Ltd.

Antwerp, 105 pks. "

Talc—
New York, 766 bgs. Wilson, Sons,
& Co., Ltd.

Tar—
Marseilles, 18 cks.

Tartar—
Bordeaux, 5 cks. Rawson &
Robinson

Marseilles, 5 cs. Wilson, Sons,
& Co., Ltd.

Tartaric Acid—
Rotterdam, 5 cks. Hutchinson
& Son

" 2 W. & C. L.
Ringrose

Treacle—
New York, 300 brls. Wilson,
Sons, & Co., Ltd.

OF
THE PRINCIPAL PORTS OF THE UNITED KINGDOM.

Week ending June 19th.

Aniline Oil		
Rotterdam,	5 dms.	£100
Ghent,	6 cks.	110
Aniline Salts		
New York,	65 cks.	£200
Benzol		
Sydney,	20 dms.	£1
Melbourne,	25	11
Carbolic Acid		
Treport,	25 cks.	£11
Sydney,		21 pks.
Hioho,	100	25
Boston,	18	207
Rotterdam,	48	207
Cresote		
New York,	2 cs.	£60
Cresote Oil		
New York,	9,995 cks.	£1,075
Naphtha		
Sydney,	13 cs.	£20
Melbourne,	10 dms.	8
Napthalins		
Dunkirk,	1,992 lbs.	£100
Melbourne,	8 cks.	11
Pitch		
Mauritius,	20 bbls.	£2
Galatz,	20	—
Baltimore,	9,743 lbs.	107
New York,	5,743	104
Dordt,	155 tms.	251
Halifax,	45	22
Tar		
Mauritius,		20 cks. £10
Melbourne,	20 dms.	—
Galatz,	5 bbls.	7

45 28 13	Salts of Soda & Salts of Lime—	Santander, 1 16	Sourabaya, 45
30 3 8	New York, 2 cs. 10 cks. £126	St Petersburg, 5 1 170	Trieste, 30
220 37	Sheep Dip—	Ammonium Sulphate—	Valencia, 140
200 100	Sydney, 600 cs. £1,500	Tagal, 59 t. 12 c. £708	Vera Cruz, 159
8 7	Kingston, 22 dms. 13	Sourabaya, 100 1 1,149	Wellington, 17 bxs.
250 cks. £156	Delagoa Bay, 20 5	New York, 25 12 1 q. 258	Ancona, 52
10 t. 6 c. 26	M. Video, 300 87	Tarragona, 9 15 95	Baltimore, 52
12 brls. £7	New York, 100 200	Demerara, 58 18 2 610	Bari, 205
	B. Ayres, 7 t. 8 c. 280	Philadelphia, 15 15 166	Bilbao, 30
	Pt. Elizabeth, 2 16 115	Las Palmas, 77 7 3 795	Braila, 53
	Silver Nitrate—	Valencia, 135 3 1,456	Brindisi, 33
	Bombay, £19	Arsenic—	B. Ayres, 50
	Soda—	Catania, 1 t. 2 c. 1 q. £17	Cartagena, Sp., 4
	Valparaiso, 14 c. £80	Asbestos—	Corunna, 11 brls.
	Rio de Grande, 1 t. 11	Smyrna, 1 cs.	Haifa, 1 kg.
	Soda Ash—	Bleaching Powder—	Hamilton, 50
	Wellington, 5 t. 3 c. £19	Baltimore, 372 cks. 63 tcs.	Ibrail, 18
	Lyttelton, 10 12 45	Barcelona, 3	Maccio, 12
	Soda Salts—	Bilbao, 15	Malta, 18
	New York, 9 t. 16 c. £160	Bordeaux, 20 brls.	Maranham, 13
	Sodium—	Boston, 1,496 52	Odesa, 55
	New York, 2 t. 10 c. £445	Delagoa Bay, 20 dms.	Oporto, 10
	Sodium Acetate—	Dunkirk, 36	Rio de Janeiro, 24
	Sydney, 9 cks. £74	Genoa, 125 30	St. Petersburg, 50
	Sodium Bicarbonate—	Havana, 37	San Sebastian, 70
	Dunedin, 1 t. £8	Leghorn, 3	Santa Catherina, 25
	Marseilles, 10 75	Malaga, 3	Santander, 15
	Auckland, 20 kgs. 9	Montreal, 69	Stettin, 105
	Sodium Bisulphite—	Naples, 61	Tampico, 16
	San Juan, 3 t. 11 c. £22	Newport News, 107 5 crts. 79 cs.	Valparaiso, 45
	Sodium Salicylate—	New York, 450 20 brls. 36 bxs.	
	Bombay, 1 c. £13	Passages, 15	Chemicals (otherwise undescribed)
	Sodium Silicate—	Philadelphia, 73	Hamburg, 10 t. 6 c. £91
	Terceira, 3 t. 1 c. £12	Riga, 3 5	S. Thome, 6 2 q. 12
	Sodium Sulphate—	Seattle, 1,319 2 cs.	Bombay, 4 10 166
	Ghent, 150 t. £150	Shanghai, 20	Stettin, 5 9
	Strontium Nitrate—	Bombay, 20	Calcutta, 1 10 57
	Bombay, 9 c. £13	Calcutta, 125	Philadelphia, 25 16 825
	Sulphur—	Odesa, 30	China Clay—
	E. London, 11 t. 17 c. £123	Rouen, 17	Bombay, 130 t.
	Demerara, 3 15 24	San Sebastian, 27	Boston, 379
	Mauritius, 500 cs. 167 brls. 350	Boracic Acid—	Dunedin, 4
	Algoa Bay, 50 17	Adelaide, 10 c. £12	Philadelphia, 350 cks. 478 bgs.
	Natal, 15 t. 2 72	Rotterdam, 6 t. 13 160	Barcelona, 10
	Pt. Elizabeth, 2 5 26	Yokohama, 2 9 2 q. 35	Calcutta, 26 11 c.
	Melbourne, 3 5 32	Borax—	Coal Products—
	Sulphuric Acid—	Antwerp, 15 t. 2 c. £303	Aniline Salts
	E. London, 5 cs. £9	Vera Cruz, 1 9 99	Boston, 30 cs.
	Colombo, 4 t. 13 c. 28	Adelaide, 10 11	Genoa, 10 brls.
	Penang, 1 9 20	Rotterdam, 31 1 2 q. 624	Creosote Oil
	Cape Town, 1 9 7	Stettin, 4 11 1 92	Lisbon, 350 brls.
	Sulphuric Ether—	Iquique, 10 9	Naphthaline Colours
	M. Video, 4 c. £32	Mazatlan, 1 6 3 28	New York, 2 crts.
	Tartaric Acid—	Kobe, 1 14 1 32	Pitch
	E. London, 1 c. £11	Yokohama, 6 13 3 163	New York, 22 cks.
	Yokohama, 2 t. 6 250	Calcium Chloride—	Rouen, 2
	Melbourne, 5 95	Gijon, 4 c. £1	Tar
	St. Petersburg, 2 12 12	Carbolic Acid—	Galatz, 125 brls.
	Sydney, 2 15 294	New York, 2 t. 7 c. 2 q. £125	Lagos, 20
	Fremantle, 5 18	Hamburg, 13 12 679	Pernambuco, 10
	Bombay, 4 kgs. 19	Mazatlan, 8 5 140	Sierra Leone, 5 20 hf. brls.
	LIVERPOOL.	Rouen, 2 2 109	Tar Salts
	<i>Week ending June 19th.</i>	Hiogo, 2 10 68	New York, 30 cks.
	Acetic Acid—	Caustic Potash—	Coal Products (otherwise undescribed)
	Mazatlan, 10 c. £32	Bombay, 8 c. £12	Ukaka, 3 brls.
	Alkali—	Caustic Soda—	Cobalt Oxide—
	Santander, 11 t. 4 c. 3 q. £40	Adelaide, 10 brls.	New York, 4 c. 2 q. £97
	Albumen—	Alexandretta, 1 kg. 7 cks.	Copperas—
	Vera Cruz, 18 c. 1 q. £20	Alicant, 64 dms.	Callao, 3 t. 14 c. £7
	Alum—	Amsterdam, 8	Copper Sulphate—
	Sydney, 2 t. £13	Antwerp, 30	Tampico, 12 t. 10 c. £178
	Madras, 12 c. 1 q. 3	Barbadoes, 12	M. Video, 3 2 q. 25
	Malaga, 3 6 19	Barcelona, 341 40	Sydney, 5 86
	Cape Town, 13 3	Batavia, 50	Bilbao, 14 10 2 328
	Odesa, 5 10 35	Bordeaux, 150	Vigo, 15 3 1 233
	Honolulu, 17 19 92	Boston, 150	Montreal, 2 9 3 39
	Palermo, 1 6 1 9	Brisbane, 10 bxs.	Bordeaux, 401 17 1 5,640
	Aluminoferrie—	Catania, 30	Nantes, 150 3 1 2,112
	Calcutta, 15 t. 13 c. 2 q. £39	Copenhagen, 6	Rouen, 180 3 1 2,753
	Aluminous Cake—	E. London, 8	Tarragona, 15 3 2 237
	Calcutta, 35 t. 13 c. 3 q. £123	Fiume, 135	Barcelona, 25 3 2 390
	Ammonia (Liquid)—	Galatz, 73	Naples, 4 10 3 77
	Rangoon, 3 cs. £7	Genoa, 144	Galatz, 6 5
	Ammonium Carbonate—	Haifa, 6	Charente, 25 6 1 397
	Gijon, 3 c. £5	Halifax, 30	Marseilles, 50 3 3 389
	Odense, 1 t. 2 36	Hamburg, 181	Lisbon, 5 1 1 79
	Montreal, 4 125	Hiogo, 102	Genoa, 14 18 3 222
	St. Petersburg, 1 5 44	Honolulu, 30	Copenhagen, 2 10 3 15
	Hiogo, 1 6 3 q. 46	Leghorn, 10	Teneriffe, 2 19 3 35
	Odessa, 4 136	Lisbon, 110	Disinfectants—
	Ammonium Chloride—	Madeira, 10	New York, 1 t. 18 c. 3 q. £23
	Corunna, 4 c. 2 q. £9	Malaga, 217	Dried Blood—
	Philadelphia, 24 t. 11 2 822	Marseilles, 136	Gd. Canary, 20 t. 2 c. £153
	Piraeus, 3 11	Melbourne, 100	Farina—
	Antwerp, 9 20	Newport News, 178	Rio de Janeiro, 15 bgs.
	Leghorn, 18 20	New York, 737	Glue—
	Beyrout, 1 7 49	Pernambuco, 75	Gibraltar, 2 brls.
		Riga, 189	New York, 30 cs.
		Rotterdam, 47	Boston, 3 pks.
		Samarang, 31	Guano—
		Santos, 285	Las Palmas, 10 t. £53
		Seville, 100	Gypsum—
			New York, 73 t. 3 q. £215
			Stettin, 7 c.

Time — Lago, 2 t. 3 c. 2 q. £8 C. C. Cande, 20 brls.	Bilbao , 25 cs Boston, 300 Calcutta, 2 966 2 c. Cameroons, 181 9 Cape Town, 5 E. London, 8 15 Ghent, 100 Montreal, 1,074 13 New York, 1,007 10 Old Calabar, 30 Para, 130 Portland Or., 490 Porto Novo, 25 Rotterdam, 100 S. John's, N.B., 800 Sydney, 205 Wellington, 60 19 Boma, 6 B. Ayres, 5 7 Faroe Is., 165 Funchal, 3 Guernsey, 3 6 Hamburg, 2 6 Jersey, 5 Landana, 5 Loango, 23 Malta, 2 1 Matadi, 26 15 Melbourne, 161 13 Muculla, 5 7 Noqui, 40 3 Pt. Royal, 1,000 Rangoon, 1,715 Shanghai, 60 13 Stockholm, 40 3 Trinidad, 18 15 Ukaka, 18 15	Retterdam , 250 Shanghai, 1,540 Stockholm, 40	Soda — Boston, 15 cks. Magog, 2	Soda Alkali — Barcelona, 70 brls. 50 cks. Galatz, 50 Genoa, 33 Ibrail, 35 Piræus, 10 Cartagena, Sp., 12 Lisbon, 116	Sodium Chlorate — Antwerp, 40 kgs. Bordeaux, 2 cks. Hamburg, 40 5 Vera Cruz, 2	Sodium Nitrate — Las Palmas, 50 kgs.	Sodium Phosphate — Montreal, 2 cks.	Sodium Prussiate — Boston, 12 cks.	Sodium Silicate — Malta, 12 brls. Mauritius, 7 Corunna, 12 Seville, 35	Sodium Sulphate — New York, 76 cks. Wellington, 16 brls.	Sulphur — Pt. Natal, 8 t. 16 c. Mazatlan, 4 19 Boston, 357 15 Montreal, 1 10 Philadelphia, 57 3 Pernambuco, 2 5 26 Vera Cruz, 2	Sulphuric Acid — Sierra Leone, 8 c.	Superphosphate — Las Palmas, 21 t.	Tartaric Acid — Mazatlan, 2 c.	Tin Crystals — Montreal, 11 c. 1 q.	Treacle — Brussels, 10 brls. Norfolk, 25 Rotterdam, 25 65 cks. Sundswall, 50 Terneuzen, 5 14 15 Amsterdam, 25 Antwerp, 194 25 Cape Town, 5 1 Christiania, 180 Faroe Islands, 10 Ghent, 20 Stockholm, 200	Turpentine — Bombay, 2 c. 2 q. Calcutta, 200 dms.	Varnish — Barcelona, 1 cs. 1 dms. Bilbao, 1 kg. Cadiz, 8 6 cks. Genoa, 20 Shanghai, 1 Talcabano, 1 Braila, 1 Cape Town, 6 Constantinople, 2 Pernambuco, 1 Seville, 1 Trinidad, 2	Whiting — Pernambuco, 50 cks. Valparaiso, 110 kgs.	Wood Pulp — Paris, 30 cs.	Zinc Chloride — Bombay, 5 t.	Zinc White — Antwerp, 8 cks. New York, 5 cs.	MANCHESTER Week ending June 19th.	Alum — San Sebastian, 26 cks.	Aniline Colours — Rotterdam, 3 cks.	Asbestos — Bombay, 5 cks.	Caoutchouc — Barcelona, 3 cs.	Caustic Soda — Seville, 10 dms. Valencia, 30 Bombay, 20	Copper Sulphate — Barcelona, 21 cks.
Litharge — Oporto, 4 brls.	Magnesium Sulphate — Demerara, 5 brls.	Manganese — Hamburg, 5 brls.	Manure — New York, 51 t. £597 St. Nazaire, 100 2 c. 262	Paint — Calcutta, 1 ck 107 kgs. Cienfuegos, 2 Coquimbó, 68 cs. 36 Curacao, 30 Fernando Po., 25 Lisbon, 9 dms. Manila, 26 Matanzas, 2 Old Calabar, 22 22 San Juan, 99 San Thome, 22 pkgs. Shanghai, 40 Trieste, 2 cs. 50 Valencia, 1 Boma, 2 cks. Cameroons, 1 3 Cape Town, 65 La Libertad, 1 Luanda, 1 Mexico City, 39 10 cks. Sette Cama, 1	Painters' Colours — Alexandria, 100 brls. Baltimore, 78 cks. 125 Bombay, 15 cs. 200 bgs. Danzig, 65 kgs 100 Hamburg, 1 Lisbon, 15 Malmo, 40 Melbourne, 24 brls. M. Video, 169 Odessa, 30 Pernambuco, 10 Piræus, 1 47 110 dms. Quebec, 23 7 100 bgs. Rotterdam, 1 Salazca, 25 Santander, 17 brls. Seville, 8 Syra, 58 Talcabano, 71 Teneriffe, 5 16 B. Ayres, 50 Calcutta, 4 Cape Town, 20 1 Gibraltar, 25 4 Gijon, 50 Las Palmas, 25 dms. Manaos, 10 pkgs. Maranham, 4 brls. Montreal, 20 Para, 2 cs. 44 Rio de Janeiro, 2 cs. 44 Warri, 41 8 dms.	Phosphorus — Hiogo, 1 t. 5 c. £300	Potassium Bichromate — Piræus, 7 t. 1 c. £266 Seville, 2 84 Bombay, 1 18 2 q. 79	Potassium Carbonate — New York, 2 t. 16 c. 3 q. £75	Potassium Chlorate — Mazatlan, 9 c. £18 Tokio, 1 t. 38 San Francisco, 2 10 94 Antwerp, 1 45 Naples, 1 51 Copenhagen, 1 5 62 Rotterdam, 2 4 126 Oporto, 13 32 Vera Cruz, 23 Riga, 5 186 Cape Town, 1 42 Stettin, 10 570 San Paulo, 2 78 Baltimore, 20 bks. 2 11 81 Christiania, 1 3 9 Hamburg, 1 5 47 Boston, 15 614 Kobe, 5 105 St. Petersburg, 20 865 Hiogo, 54 10 2,169 New York, 35 10 1,511	Potassium Prussiate — Gijon, 3 c. £15	Potassium Silicate — Amsterdam, 1 t. 4 c. 2 q. £6	Salt — Antwerp, 395 t. Baltimore, 300	Salt Cake — Gijon, 5 t. 11 c. 2 q. £10 Dunedin, 5 1 8 Rotterdam, 20 30 Antwerp, 50 2 106	Saltpetre — Para, 5 c. £6 Victoria, B. C., 1 t. 23 Paita, 8	Sheep Dip — B. Ayres, 22 t. 8 c. 3 q. £462 Calcutta, 1 2 2 25	Silver Nitrate — Manila, 1 cs. £15	Slag — Bordeaux, 204 bgs. Demerara, 50 t. La Guayra, 20	Soap — Accra, 317 bxs. Alexandria, 20 Algon Bay, 2,528 205 cs. Antigua, 40 Antwerp, 39 Banoka, 20 Bata, 40 Bombay, 24 1 ck. Bonny, 300 Calcutta, 250 bdl. Cameroons, 465 Cape Lahou, 20 Cape Town, 2,145 Christiania, 175 Clarence, 32 Curacao, 532 E. London, 2,340 85 Degama, 100 Havre, 300 Honolulu, 75 Iquique, 1 Johannesburg, 20 Jersey, 20 Landana, 40 Lanzarote, 61 Malta, 11 Manila, 6 Matadi, 156 2 Mauritius, 1,050 New York, 2,300 203 22 cts. N Kani, 20 Opobo, 1,557 Pt. Elizabeth, 2,330 100 Pt. Natal, 1,351 5 Rangoon, 1,250 St. Lucia, 40 St. Nazaire, 50 San Juan, 100 Sapelli, 100 Sierra Leone, 68 Singapore, 500 50 Trinidad, 500 Valparaiso, 51 8 Vera Cruz, 3 cs. Warri, 650 20	Soda Ash — Antwerp, 150 bgs. Bombay, 10 cks. 25 kgs. Callao, 40 Genoa, 100 Ghent, 250 Kalmar, 25 M. Video, 150 brls. Montreal, 13 tcs. 70 New York, 2,362 14 213 Philadelphia, 1,401 182 91 Sydney, 510 Wellington, 302 Yokohama, 60 Baltimore, 3,840 158 261 Boston, 1,480 161 142 330 cs. 100 kgs. B. Ayres, 22 250 brls. Kobe, 114 Konigsberg, 100 Oporto, 10 Pelotas, 10 Pernambuco, 30 Riga, 5 Rotterdam, 150 Salonica, 100 Samarang, 12 20 Santos, 50 Smyrna, 150 Stockholm, 9	Soda Crystals — Galatz, 50 brls. Halifax, 25 kgs. Honolulu, 70 Malta, 110 M. Video, 20 40 cks. Newport News, 56 Piræus, 20 Pt. Elizabeth, 30 Portland, Or., 100 St. John's, Nfld., 45 Boston, 616 200 bgs. 25 B. Ayres, 100 Demerara, 20 Gibraltar, 10 Montreal, 225 kgs New York, 140 Valparaiso, 200	Sodium Bicarbonate — Aleppo, 20 kgs. Baltimore, 350 25 cks. Bombay, 590 Cartagena, Sp., 25 bxs. Catania, 50 Demerara, 20 Galatz, 88 10 brls. Genoa, 217 Ghent, 12 Halifax, 170 Hamburg, 129 3 Honolulu, 50 Leghorn, 25 22 Malaga, 130 Melbourne, 150 Messina, 40 Montreal, 400 100 bgs. Naples, 120 Newport News, 100 50 brls. New York, 100 167 Paris, 40 Philadelphia, 20 Piræus, 72 Portland, Or., 60 Riga, 218 Rotterdam, 180 5 Salonica, 40 Seville, 30 20 30 Sydney, 300 8 Valencia, 35 Valparaiso, 450 Varna, 20 Antwerp, 31 3 Batavia, 20 Colombo, 100 1 Constantinople, 40 3 30 Copenhagen, 40 5 Corunna, 10 Dunkirk, 10 Gijon, 20 Guajewsky, 250 Ibrail, 55 Konigsberg, 75	Launceston , 20 Marseilles, 120 Santos, 30							

61 cks.
Salts —
45 cks.
12
10 cks.
20
Oil —
20 cs.
6 brls.
7 cs.
Ore —
1½ t.
147½ t.
tone —
1 ck.
ilicate —
30 cks.
100
96 cks.
9 cks.
4 brls. 25 pns.
ride —
6 cks.
HULL.
ending June 15th.
m Sulphate —
702 bgs.
696
30 bgs.
85 cks.
Powder —
25 cks.
oda —
18 dms. 2 cks.
60
(otherwise undescribed)
12 cks.
3 22 pks.
10 1 cs. 949 slbs.
5 60 pks.
10 2
6 11
15
24 10
18 112 pkgs.
30 121 pks.
2 1 pkge.
d Oil —
299 c.
27
100
and, 17
106
888
50
1,256
120
230
(otherwise undescribed)
12 cks.
12 bgs.
3
1
4
8 82
il —
14 c.
17
18
124
and, 31
1,072
3
123
4
102
63
92
9
773 t.
401
9 cks.

Paint —
Ghent, 1 cs.
Painters' Colours —
Antwerp, 2 cs.
Abo, 3 dms.
Amsterdam, 6 cks.
Bergen, 5 130 pks.
Boston, 10
Bremen, 19
Christiania, 37 1
Copenhagen, 8 2 dms.
Drontheim, 16
Ghent, 22
Gothenburg, 27 1 5
Hamburg, 17
Konigsberg, 7
Rotterdam, 1
Stavanger, 34
St. Petersburg, 14 15 pks.
Stettin, 46
Pitch —
Antwerp, 127 t.
Boston, 46
Soap —
Bergen, 55 cs.
Christiania, 21
Copenhagen, 1
Starch —
Abo, 10 cks.
Copenhagen, 110 cs.
Tallow —
Gothenburg, 35 cks.
Rotterdam, 100
Wasa, 216
Tar —
Antwerp, 4 cks.
Amsterdam, 21
Christiania, 5
Dunkirk, 70 t.
Ghent, 1
Hamburg, 3
Rotterdam, 10
St. Petersburg, 27
Stettin, 2
Treacle —
Stettin, 10 cks.
Varnish —
Antwerp, 6 cks. 2 cs. 1 dm.
Copenhagen, 1
Hamburg, 1
Rotterdam, 2
St. Petersburg, 5

GLASGOW.

Week ending June 20th.

Ammonium Carbonate —
Valparaiso, £36
Ammonium Sulphate —
Valencia, 51 t. 5¼ c.
Barbadoes, 246 18¼
Bleaching Powder —
Sydney, 20 t. 1½ c.
Borax —
Stockholm, 1 t. 2 c.
Coal Products —
Creosote Oil —
U.S.A., 150 brls. £90
Christiania, 150 brls.
Pitch —
Canada, £145
U.S.A., 47
Tar —
Calcutta, £78
Canada, 21
Montreal, 67
Christiania, 10 brls.
Dyestuffs —
Logwood —
Montreal, £24
Gelstine —
Canada, £218
Glue —
Christiania, 15 bgs.
Iodine —
Rotterdam, £715
Linseed Oil —
Cape Town, 19 c.
Barbadoes, 1 t. 1¼
Canada, 21 10½
Valparaiso, 4 1¼
Aden, 1 4
Magnesium Sulphate —
Sydney, £23
Manganese —
Basle, £102
Nitrate of Lead —
Genoa, 2 t. 4½ c.
Paint —
Algoa Bay, £42

B. Ayres, 90
E. London, 109
Kingston, Jam., 25
Valparaiso, 108
Aden, 10 c.
Painters' Colours —
Cape Town, £166
Rotterdam, 104
Calcutta, 50
Sydney, 25
Paraffin Wax —
Antwerp, 19¼ c.
Barcelona, £167
Fiune, 242
Genoa, 62
Leghorn, 98
Milan, 74
Trieste, 11 t. 18½
Venice, 152
Madras, 32
Bordeaux, 205
Potassium Bichromate —
Antwerp, £426
Genoa, 164
Ghent, 200
Venice, 67
Bordeaux, 192
Soap —
Barbadoes, 2 t. 4 c.
Grenada, 2 1½
Kingston, Jam., 8 17
Valparaiso, 1 14½
Antigua, 1 5
Barbadoes, 6
Sodium Bichromate —
Antwerp, £350
Genoa, 361
U.S.A., 255
Bordeaux, 20
Sodium Phosphate —
U.S.A., £58
Treacle —
Amsterdam, 5 t.
Christiania, 4
Varnish —
Cape Town, £20
E. London, 32
White Lead —
Cape Town, £65
E. London, 35
Calcutta, 37
Sydney, 410

TYNE.

Week ending June 15th.

Alkali —
Antwerp, 2 t. 4 c.
Savona, 94 2
Rotterdam, 19 6
Copenhagen, 6 17
Leghorn, 8 10
Ammonia —
Odense, 2 t. 10 c.
Antimony —
Stockholm, 1 t.
Montreal, 4
Copenhagen, 10 c.
Arsenic —
Montreal, 27 t. 1 c.
Asbestos —
Bergen, 17 bs.
Barium —
Rouen, 20 t. 4 c.
Bleaching Powder —
Stockholm, 2 t. 14 c.
Antwerp, 55 9
Hamburg, 9 5
Christiania, 7 3
Odense, 4 cks.
Rotterdam, 22 6
Copenhagen, 11 4
Rouen, 5
Trondhjem, 10 1
Gothenburg, 14 3
Caustic Soda —
Antwerp, 15 t. 4 c.
Hamburg, 2 18
Copenhagen, 15 6
Malta, 4 18
Gothenburg, 50 4
Valencia, 8 5
Farina —
Bergen, 4 t.
Litharge —
Stockholm, 5 t. 15 c.
Montreal, 64 11
Rouen, 1 9
Leghorn, 2
Copenhagen, 2 5

Magnesia —
Stockholm, 1 t. 9 c.
Manure —
Castellon, 40 t.
Naphthaline —
Antwerp, 10 t. 2 c.
Ochre —
Trondhjem, 1 t. 12 c.
Oxalic Acid —
Montreal, 1 t. 14 c.
Paint —
Antwerp, 7 t. 5 c.
Archangel, 1
Malta, 1 7
Rosin —
Malta, 10 t.
Slag —
Rotterdam, 592 t.
Soda —
Stockholm, 21 t. 11 c.
Savona, 16 5
Christiania, 5
Nakskov, 14
Odense, 10 12
Aarhuus, 35 cks.
Rotterdam, 19 14
Harlingen, 5 3
Bergen, 2 3
Christiansund, 5 3
Molde, 1 9
Archangel, 11
Leghorn, 20 5
Malta, 7 8
Bodo, 1 3
Seville, 9 6
Soda Ash —
Antwerp, 9 t. 17 c.
Christiania, 3 19
Archangel, 2 3
Gothenburg, 23 10
Copenhagen, 10 8
Sodium Hyposulphite —
Montreal, 10 t.
Sodium Sulphate —
Gothenburg, 230 t.
Sulphur —
Gothenburg, 35 t.
Tar —
Archangel, 14 t. 6 c.
White Lead —
Stockholm, 1 t. 10 c.
Montreal, 73 5
Archangel, 4 1
Copenhagen, 10 1
Zinc White —
Archangel, 1 t. 10 c.

GOOLE.

Week ending June 12th.

Benzol —
Boulogne, 48 cks.
Hamburg, 50
Rotterdam, 24 23 dms.
Chemicals (otherwise undes.) —
Boulogne, 1 ck.
Bruges, 1
Coal Products (otherwise undes.) —
Boulogne, 3 cs. 28 cks.
Hamburg, 41
Rotterdam, 1 38
Creosote —
Knysna, 200 cks.
Dyestuffs (otherwise undescribed)
Hamburg, 135 cks. 54 bgs.
Pitch —
Dunkirk, 228 t.
GRIMSBY.
Week ending June 15th.
Chemicals (otherwise undescribed)
Antwerp, 1 ck.
Rotterdam, 10 cs.
Malmo, 4
Coal Products (otherwise undes.) —
Dieppe, 93 cks.
Rotterdam, 1
Pitch —
Rotterdam, 20 t.

PRICES CURRENT.

WEDNESDAY, JUNE 26TH, 1895.

PREPARED BY MESSRS. HIGGINBOTTOM AND CO., 116, PORTLAND STREET, MANCHESTER.

The values stated are F.O.R. at maker's works, or at usual ports of shipment in U.K. The price in different localities may vary.

Acids:—

	£	s.	d.
Acetic, 25 % and 40 %	per cwt.	6/	9 3/4
Glacial	per lb.	40/-	
Arsenic S.G., 2000°	per lb.	0	15 0
Fluoric	per lb.	0	0 3 3/4
Muriatic (Tower Salts), 30° Tw.	per bottle	0	0 10
(Cylinder), 30° Tw.	per lb.	0	3 0
Nitric 80° Tw.	per lb.	0	0 1 1/2
Nitrous	per lb.	0	0 1 3/4
Oxalic	nett	0	0 3 3/4
Phosphoric, 1750°	per lb.	0	1 1
Picric	per lb.	0	0 10
Sulphuric (fuming 50 % T.)	per ton	15	10 0
(monohydrate)	per lb.	5	10 0
(Pyrites, 168°)	per lb.	3	0 0
(free from arsenic, 145°)	per lb.	1	5 0
Sulphurous (solution) S.G. 1025	per lb.	3	0 0
Tannic (pure)	per lb.	0	1 0
Tartaric	per lb.	0	0 10 3/4
Arsenic, white powdered	per ton	15	0 0
Alum (house lump)	per lb.	4	12 6
Alumina Sulphate (pure)	per lb.	4	12 6
Aluminoferrous	per lb.	2	7 6
Aluminium	per lb.	0	2 10
Ammonia, Anhydrous	per lb.	0	1 3
" 880=25° B.	per lb.	0	0 3
" 24° B.	per lb.	0	0 2 3/4
Carbonate	nett	0	0 3 3/4
Muriate	per ton	21	10 0
(sal-ammoniac) 1st & 2nd	per cwt.	39/-	37/-
Nitrate	per ton	40	0 0
Phosphate	per lb.	0	0 8 1/2
Sulphate (grey) London	per ton	9	15 0
(grey) Hull	per lb.	9	17 6
Aniline Oil (pure)	per lb.	0	0 5 1/4
Aniline Salt	per lb.	0	0 4 3/4
Antimony	per ton	32	0 0
(tartar emetic)	per lb.	0	0 7
(golden sulphide)	per lb.	0	0 10
Barium Chloride	per ton	6	7 0
Carbonate (native)	per lb.	3	5 0
Sulphate (native levigated)	per lb.	45/-	10 7 1/2
Bleaching Powder, 35 %	nett	7	0 0
Liquor, 7 %	per lb.	3	10 0
Bisulphide of Carbon	per lb.	13	0 0
Chromium Acetate (crystal)	per lb.	0	0 6
Calcium Chloride	per ton	2	2 6
China Clay (at Runcorn) in bulk	per ton	15/-	10 30/-

Coal Tar Products and Dyes:—

Aluminate (artificial) 80 %	nett per lb.	0	0 8
Magenta	per lb.	0	3 9
Anthracene, 30 % A. (f.o.b. London)	per unit per cwt.	0	1 0 1/2
Resorcinol, 90 % nominal	per gallon	0	1 0
Carbolic Acid (crystallized 90°)	per lb.	0	0 6 1/2
(crude 80°)	per gallon	0	1 7 1/2
Cresolite (ordinance)	per lb.	0	0 1 1/2
(distilled for Lagoon light)	per lb.	0	0 2
Crude Naphtha 50 % @ 100° C.	per ton	2	10 0
Cresol Oil, 24° Tw.	per lb.	1	13 0
Pitch, f.o.b. Liverpool or Ganton	per gallon	0	1 2
Sulphur Naphtha, 50 % at 100°	per lb.	0	0 2 1/2
Luogen and "Wells" Oils	per ton	42	8
Copper	per lb.	15	15 0
Sulphate	per lb.	41	10 0
Oxide (copper scales)	per lb.	16	10 0
Glycerine (crude)	per lb.	42	10 0
(distilled S.G. 1250°)	nett, per oz.	0	0 9
Iodine	per ton	1	5 0
Iron Sulphate (crystallized)	per ton	2	0 0
Sulphate (antimony slag)	per lb.	11	7 6
Lead (sheet) for cash	per lb.	13	5 0
Litharge Flake (ex ship)	per lb.	24	10 0
Acetate (white)	per lb.	14	10 0
Acetate (brown)	per lb.	16	0 0
Carbonate (white lead) pure	per lb.	18	15 0
Titane	per lb.	18	15 0

Lime, Acetate (brown)	per ton	5	12 6
(grey)	per ton	8	10 0
Magnesium (ribbon and wire)	per oz.	0	2 3
Chloride (ex ship)	per ton	2	7 6
Carbonate	per cwt.	1	17 6
Hydrate	per ton	17	0 0
Sulphate (Epsom Salts)	per ton	3	0 0
Manganese, Sulphate	per lb.	17	0 0
Borate	per cwt.	2	15 0
Ore, 70 %	per ton	4	5 0
Methylated Spirit, 61° O.P.	per gallon	0	1 10
Naphtha (Wood), Solvent	per lb.	0	3 0
Miscible, 60° O.P.	per lb.	0	3 0

Oils:—

Cotton-seed	per ton	18	10 0
Linseed	per gallon	23	0 0
Petroleum, American	per gallon	0	0 6 1/2
Stearine	per ton	25	10 0
Phosphorus (yellow)	per lb.	0	2 2
(red)	per lb.	0	2 3
Potassium (metal)	per oz.	0	3 7
Bichromate	per lb.	0	0 4 1/2
Carbonate, 90% (ex ship)	per ton	16	15 0
Chlorate	per lb.	0	0 5
Cyanide, 98%	per lb.	0	1 0
Hydrate (Caustic Potash) 80/85 %	per ton	21	5 0
(Caustic Potash) 75/80 %	per ton	19	15 0
(Caustic Potash) 70/75 %	per ton	19	10 0
Nitrate (refined)	per cwt.	1	1 6
Permanganate	per cwt.	2	17 6
Prussiate Yellow	per lb.	0	0 7 1/2
Sulphate, 90 % (ex ship)	per ton	9	15 0
Muriate, 80 % (do.)	per ton	8	10 0
Silver (metal)	per oz.	0	2 6 1/2
Nitrate	per lb.	0	2 0
Sodium (metal)	per lb.	0	2 11
Carb. (refined Soda-ash) 48 %	nett per ton	4	15 0
(Caustic Soda-ash) 48 %	per lb.	3	17 6
(Carb. Soda-ash) 48%	per lb.	3	15 0
(Alkali) 58 %	per lb.	3	7 6
(Soda Crystals)	per lb.	2	2 6
Acetate (ex-ship)	per lb.	14	0 0
Arsenate, 45 %	per lb.	11	0 0
Chlorate	per lb.	0	0 6 1/2
Borate (Borax)	nett, per ton	18	10 0
Bichromate	per lb.	0	0 1 1/2
Hydrate (77 % Caustic Soda) (f.o.b.) net pr. ton	per ton	9	7 6
(74 % Caustic Soda)	per ton	8	7 6
(70 % Caustic Soda)	per ton	7	10 0
(60 % Caustic Soda)	per ton	6	10 0
(60 % Caustic Soda, cream) (f.o.b.)	per ton	6	7 6
Bicarbonate	per lb.	6	10 0
Hypsulphite	per lb.	5	10 0
Manganate, 30%	per lb.	16	0 0
Nitrate (95 %) ex-ship Liverpool	per cwt.	0	3 1 1/2
Nitrite, 98 %	per ton	29	0 0
Phosphate	per lb.	14	10 0
Silicate (glass)	per ton	4	10 0
(liquid, 100° Tw.)	per lb.	3	10 0
Stannate, 40 %	per cwt.	3	2 9
Sulphate (Salt-cake)	per ton	0	17 6
(Glauber's Salts)	per lb.	1	5 0
Sulphide	per lb.	8	0 0
Sulphite	per lb.	5	5 0
Strontium Hydrate, 100%	per lb.	8	10 0
Sulphocyanide Ammonium, 95 %	per lb.	0	0 6 1/2
Barium, 95 %	per lb.	0	0 4 1/2
Potassium	per lb.	0	0 7
Sulphur (Flowers)	per ton	5	15 0
(Roll Brimstone)	per lb.	5	0 0
Brimstone: Best Quality	per lb.	3	12 6
Superphosphate of Lime (26%)	per lb.	2	7 6
Tallow	per lb.	23	10 0
Tin Crystals	per lb.	0	0 5 1/2
English Ingots	per ton	66	0 0
Zinc (Spelter)	per lb.	14	12 6
Chloride (solution, 100° Tw.)	per lb.	5	7 6

INDEX.

VOL. XVI.

A	Page	A	Page	A	Page	A	Page
Patent Specifications:-		Austria, Sugar Crisis in	161	British Association President	206	Coal Dust in Mines	127
sis and Apparatus therefor	417	Automatic Benzoline Burner	35	" British and Colonial Druggist "	164	Coal, Preventing Gaseous Occlusion	
nides from Sulphocyanides	417			British Goods, Market for, in Tunis	337	in	195
anides	417	B		" Honduras Tariff	336	Coal Shipments, Scotch	403
s, Treating Complex	417	Bacteriology of Sewage	114	" India, Salt in	144	Cocoa, " Prepared "	132
th, University College of	23	Bacteria Sewage Treatment, Bad for	306	" India, Tariff of	144	Cold Air Stores, Pumice in	385
th Boiling Pitch	243	Baku, Serious Oil Fire at	323	Broken Hill Proprietary Co., Ltd.	102	Collapse of Charleroi Glass Strike	307
Petroleum Lamp:-	24, 71, 87	Barrels, Steel	225	Brooke, Simpson and Spiller, Messrs.	207	Collapse of a Chimney	323
195, 228, 243, 275, 291, 371, 386		Basic Slag, Solubility of	114	Brown Bayley, Messrs., Ltd.	146	Colliery Check-weighmen	354, 403
er, The Oxyhydrogen	368	Battery, The Boron Carbon	131	Broxburn Oil Co., Ltd.	338	Colonel North on NaNO ₃ Combine	353
Commercial Production of	180	Bauxite, Analysis of	4	Brunner, Mond and Co., Ltd.	145	Colorado Nitrate Company, Ltd.	319
Cost of	399	Beer, Fines for Diluting	398	" Co.'s Dividend	130	Colour of Flowers, Preserving	161
Making	335	Beer, Mixing	132	Bryant and May, Ltd.	87	Combination, The Dyers'	4, 23
Enamel	131	Beetroot and Mangel Beetle	384	Bulgaria, Salt Duty in	144	Combine of the Candlemakers	243
Chem. Ind., Mannheim	323	Beet Sugar Crop, European	68	Bunsen Burner, A Telescopic	36	Combine, The Solid Paraffin	98, 132, 189
Chemist	260	Beet Sugar, The Fall in	7	Burmah, Cutch in	119, 161, 210	Commercial Cases, Hearing	87
Fibre in Paper Making	367	Belgian Enterprise in Russia	371	Butter, Foreign Purity of	354	" Court, The New	87
Changes of	71, 179, 195	Belgium, Production of Briquettes in	24	" Water in	403	" Fibres	306
tion of the Weaver Trust	206	Bill, The Brine Subsidiences	275			" Production of Acetylene	180
n of Cement	23	Benzol	367			" Trades Section L. C.	
n of Food	158	Benzoline Burner, Automatic	35	C		of Commerce	355
Cod Liver Oil	120	Bichrome and Chromium Fluoride as	6	Calcutta Linseed	306	Commissioner Kerr and Law Costs	8
Proposed, in Burning Oil	180	Mordants for Wool	6	Calder Chemical Company, Ltd.	195	Companies, Reports of, 102, 132, 145, 160	
s Gold Recovery	113	Briquettes Production in Belgium	24	Camphor Famine	419	176, 192, 207, 274, 290, 304, 319, 335, 350	
in Excelsis	130	Blackwell, Messrs. G. G., and Co.	24	Canada Wood Pulp Industry	144	368, 398	
Adation of Terpenes and		Bleach Storage Experiments	258	Canal Pollution	117	Compressed Gas Cylinder Inquiry	386
Oils:-	115, 142, 191, 224, 270	Bleach in U.S.A., Production of	243	Candle Makers' Combine	243	396, 416	
arabber in	68	Bloxam's Chemistry	385	Candle Materials, Composition and		Concentrated Manure	195
ures by Cold	227	Blue Surface Coloured Paper	177	Melting Points of	21	Conference, The Sanitary	269
d Chair for Galway College	176	Blundell, Spence and Co., Ltd.	71	Candle, Wonders of the	335	Copper Market, The 25, 72, 105, 165, 212	
d Education in Lancashire	289	Board of Agriculture Journal	321	Canning Town Petroleum Fatality	257, 352	372	
d Notes	390, 383	Boiler Inspection Compulsory	414	Caoutchouc, Indian	259	Copper Depositing Co., The American	8
d Prizes, French	385	Boiler Water, Purification of	227	Carbon Dioxide, Suffocated by	371	Copper in Peas	307
d Schools in U.S.A.	396	Bollin, Pollution of the River	7	Carborundum for Electric Lamp Fila-		Cordite Appeal: The Decision	148
sewage Farm	368	Bolton Sewage Scheme	164	ments	243	Correspondence:-	
Prosecutions under	98, 275	Bombay, Kerosene Oil in	339	Case, An Instructive	397	Action of Frost on Potatoes. C. M.	
Bleach Exports:-	22, 102, 163	Bombay, Kerosene Oil in	339	Cassel Gold Extracting Case	243, 254	Wilson	226
371		Books, Our	85	Cement, Adulteration of	23	Argon-Oxygen Cylinder Explosions,	
ing, Cummer Dryer for	179	Alkali Inspector's Report, 31st	402	Central Cyclone Company, Ltd.	148	R. W. Hill	242
Metals, Rare	227	Calcareous Cements. G. R. Red-	338	Centrifugal Tar Separator	41	Comparative Working of Coke	
s Co.'s Works, The British	143	grave	293	Ceylon, Manure in	307	Ovens. J. H. Darby	7
		Chemical Handcraft. J. J. Griffin	40	Ceylon, Petroleum Duty in	23	Facts for Manufacturers. Chemists	242
		and Sons		Chamber of Commerce Chemical Sec-		Formalin. Fuerst Bros.	226
Plating	67	Chemical Laboratory Labels, Part		tion	101, 132	" A. Jacob	226
Scale Thermometer	35	II. W. H. Symonds	233	Changes of Address	71, 179, 195, 401	" R. W. Hill	226
Solder	20	Chemical Manufacturers' Directory	243	Charleroi Strike, End of the	353	" Methy.	211
Supply Co.	287	Chemists and Their Wonders.		Chemical Contracts	275	" Schering's Formalin	
tion of Paper Mills	228	R. M. Holmes	354	" Industry, German	306, 318	Hygienic Co.	259
at of the Patent Law	286	Cellulose. Cross and Bevan	354	" of Italy	103	Novel Application of Electricity.	
Copper Depositing Co.	8	Electroplaters' Handbook. Second		" Trade, The Middlebro'	7	R. W. Hill	386
Iron Trade, Improving	401	Edition. G. E. Bonney	223	" Trades, State of:-190, 274, 334		Remarkable Electrolytical Phenom-	
Turpentine, Notes on	5	Elementary Practical Chemistry.		" Works, Fire at	209, 291	enon. H. K. Rickard	290
Vitrol Works, Transfer of	371	J. T. Hewitt and J. T. Pope	293	" Purchasing in		Spent Oxides, Extracting Apparatus.	
and Tar Products Market:		lurgy. A. H. Sexton	302	Ireland	83	tus. Bale and Co.	71
57, 72, 88, 104, 120, 133, 148, 164		Maschinenellen Hilfsmittel der		Chemical Works' Registration Tax	71	Sulphuric Acid and Alkali. G. Lunge	275
211, 228, 244, 260, 270, 291, 307		Chemische Technik. A. Parnicke	40	" Valves and Taps for	40	Correspondents, Answers to	242, 421
356, 372, 387, 404, 420.		Newspaper Press Directory	338	Chemnitz Dyeing Company	250	Crane and the Wolf	141
al Liquor in the States	383	Organic Chemistry. J. S. Scarf	338	Chemistry (?) in Fiction	118	Cost of Acetylene	399
f Bauxite	4	" R. L. Whiteley	338	Chemist's Action against a Company	260	Cottonseed Cleaning Machines, Rival	371
Bone Black	85	Recherches de Chimie et de Physio-		Chemists, German	350	Cuba Sugar Industry	190
Important to Public	321	logie Appliquées à l'Agriculture.		Chemists' Salaries in L.C.C.	355, 386	" Cummer" Dryer for Alkali Making	179
ilian Nitrate and Railway		A. Petermann	223	Chemists, Terrible Death of	259	" Drying Machines	47
y, Ltd.	350	Researches on Arseniates, &c. T.		Chili Nitrate, Sales in	148	Cultivation of Ramie	353
arcoal Company, Ltd.	304	Graham (1833)	223	Chimney, Collapse of a	323	of Sugar Beet	97
Explosive	275	Sulphuric Acid and Alkali Manu-		Chloroform, Death under	103, 191	Customs Decisions, Recent	179, 259, 362
o Correspondents	242, 421	facture. G. Lunge	258	Chromite Fluoride and Bichrome as		" Tariff of Tasmania	68
e, Estimation of Paraffins		Tables &c., for Qualitative Chemi-		Mordants for Wool	6	Cutch in Burmah	119, 161, 210
le	322	cal Analysis M. P. Muir	223	Chrome Lead Dyeing a Dangerous		Cyanide Co., A New Reported	195
ie Testing	288	Technical Chemistry. W. Nernst.		Occupation	290	" Gold Extraction	206, 323, 403
Dandy Roll	401	Translated by C. S. Palmer	302	Chrome Lead Poisoning	257	" Recovery of Gold by	243, 275
on of Education Grants	114	Treatise on Chemistry. Sir H. E.		in	337	" Gold Recovery in S. Africa	195
san Company	259	Roscoe and C. Schorlemmer	40	Chromium in Chrome Ore	337		
Tariff	144	Boom, The Petroleum	253	Church River Pollution Inquiry	285	D	
paration of	239	Borax Co., Ltd.	304	Cinders and Sewage	350	Dalton, J., Reminiscences of	54
Some Light on	227	Boron Carbon Battery	131	City and Guilds of London Institute	84	Dangerous Occupations	158
ll Obdurate	355	Bower's Patent Dryer	56	" Research Fellowship	87	Death in a Lead Works	190
ekonometer	36	Brick Dust Mortar	82	Classification of Glass	355	Death, Terrible, of a Chemist	259
Fuels, Some Patent	4	Bricks for Glover Tower	303	Closing a Works	259	Death under Chloroform	103, 191
Rubies	163	Brine Pumping	402			Decision in the Cordite Appeal	148
Whale Bone	306	" Subsidiences Bill	275			Decomposition by Electrolysis	164
Agricultural College	350	British Aluminium Co.'s Works	143			Dee, Preventing Sewage Contamina-	
re, The Physical Pheno-		176, 209				tion of	274
f	385					Diamine Green "G"	226

	Page		Page		Page		Page	
Disinfectants for Electro-Chemical Operations ..	101	Food Adulteration ..	158	Importation of Margarine ..	225	Queen v. L. C. Council <i>ex parte</i> ..	10	
Disadvantages of Hot Filling for Woolen Goods ..	19	France, Admitting Tunisian Oil Free ..	59	Imports and Exports for December ..	67	Commercial Gas Co. ..	10	
Discovery of Tellurides ..	397	Glue and Gelatine in ..	35	January ..	116	Salt Union v. Deakin ..	10	
Dispute in Tyne Chemical Trade ..	57	French Agricultural Prices ..	385	February ..	175	Ship Canal v. Salford Corporation ..	10	
Dividend, German Chemical ..	275	Fruitless Oil Drilling in U.S.A. ..	319	March ..	255	Salford v. Ship Canal ..	10	
Dividend, The Salt Union ..	116	Fuel Works, Destructive Fire at ..	8	April ..	322	Salt Union v. Thompson ..	10	
Dividends ..	145, 319, 350, 399	Fuels, Some Patent Artificial ..	4	May ..	401	White v. Mellin ..	10	
Drier, Bower's Patent ..	56	Furnace, An Electric ..	35	Improved Induction Coil ..	229	Legality of the Chilean Nitrate Sales ..	10	
Drying Machines, The "Cummer" ..	47	G		Ozonising Apparatus ..	228	Legislation in Factories ..	10	
Drysaltery Works, Fire at ..	359	Galway College, Agricultural Chair ..	176	Incandescent Gas Light Pendant ..	227	of Smokes, The ..	10	
Durham Sewage Scheme ..	335	Gas Cylinder Explosion ..	189, 237, 257	Light, A New ..	37	Leonhardt and Co., Messrs ..	10	
Dutch Madder ..	259	Gas Light and Coke Co., Ltd. ..	102	Lighting, Spirit for ..	323	Lever Bros., Ltd. ..	10	
Duty on Naphtha, Russian ..	275	Gas Liquor, Ammoniacal ..	179	India, Lead and Tin Mining in ..	68	Levinstein's, Ltd. ..	10	
Dyers' Combination, The ..	4, 93	Gas, Price of Manchester ..	179	Resin and Turpentine Production in ..	144	Linlithgow Oil Co., Ltd. ..	10	
Dyeworks, Fire at ..	419	Gas Supply of Leeds ..	79, 147	India Rubber and Telegraph Works, Co. ..	120	Linoleum Works, Fire at ..	10	
E		London ..	77, 86, 147	India Rubber in East Africa ..	68	Liquors, Ageing by Cold ..	10	
Easily Cured Nuisance ..	227	Gaseous Occlusion of Coal, Preventing ..	193	India, Salt Shipments to ..	158	Litigation, The Salt Union ..	10	
Education, Agricultural in Lancashire ..	189	Gazette Notices ..	120, 26, 58, 74, 90, 106	Indian Caoutchouc ..	259	Liverpool Exports ..	13, 29, 61, 79, 94, 101	
Education Grants, Application of ..	214	122, 124, 150, 166, 182, 198, 213, 229, 245, 261, 275, 291, 307, 323, 341, 357, 374, 390, 405		Indian Shellac Industry ..	20	125, 135, 153, 169, 185, 201, 217, 233, 249, 265, 281, 297, 313, 329, 345, 361, 377, 393, 409, 425		
Electric Soap Works for ..	393	German Chemical Dividends ..	275, 318	Indigo, Nitrate and Tallow, in 1894 ..	5	Liverpool Imports ..	11, 27, 35, 55, 71, 87, 103, 119, 135, 151, 167, 183, 199, 215, 231, 247, 263, 279, 294, 311, 327, 343, 359, 375, 391, 407, 423	
Electric Furnace, An ..	31	Chemists ..	306	Induction Coil, An Improved ..	289	Liverpool Mineral Market ..	1, 4, 20, 36, 52, 68, 84, 100, 116, 132, 148, 164, 180, 196, 212, 228, 244, 260, 276, 292, 308, 324, 340, 356, 372, 388, 404, 420	
Electric Lamp Filaments, Carbonized for ..	243	Customs Tariff Bill ..	7	Industrial Oil Lamp ..	37	Liverpool Nitrate Co., Ltd. ..	10	
Electric Chemical Decomposition ..	254	Putash Salt Industry ..	71	Infringement of Trade Titles ..	221	Liverpool Oil and Colour Market ..	1, 11, 27, 43, 59, 75, 91, 107, 123, 139, 155, 171, 187, 203, 219, 235, 251, 267, 283, 299, 315, 331, 347, 363, 379, 395, 411, 427	
Electro-Chemical Operations, Disinfectants for ..	101	Glasgow Exports ..	125, 31, 65, 79, 95, 111, 127, 143, 159, 175, 191, 207, 223, 239, 255, 271, 287, 303, 319, 335, 351, 367, 383, 399, 415, 431, 447	Inquiry, Food Products ..	205	Liverpool University College ..	10	
Electrolytic Phenomena, Remarkable ..	270	Glasgow Imports ..	12, 28, 44, 60, 76, 92, 108, 124, 140, 156, 172, 188, 204, 220, 236, 252, 268, 284, 300, 316, 332, 348, 364, 380, 396, 412, 428	Inquiry, Oxygen Cylinder Explosion, 211 ..	222, 225, 235	London Exports ..	13, 29, 45, 61, 77, 93, 109, 125, 141, 157, 173, 189, 205, 221, 237, 253, 269, 285, 301, 317, 333, 349, 365, 381, 397, 413, 429	
Electrolytic Processes, Remarkable ..	270	Glasgow Exports ..	125, 31, 65, 79, 95, 111, 127, 143, 159, 175, 191, 207, 223, 239, 255, 271, 287, 303, 319, 335, 351, 367, 383, 399, 415, 431, 447	Insect Pests ..	334	London Gas Supply ..	79, 84, 89	
Combustion of ..	129	Glasgow Imports ..	12, 28, 44, 60, 76, 92, 108, 124, 140, 156, 172, 188, 204, 220, 236, 252, 268, 284, 300, 316, 332, 348, 364, 380, 396, 412, 428	Inspecting Smoke Preventing Appliances ..	385	London Imports ..	11, 27, 43, 59, 75, 91, 107, 123, 139, 155, 171, 187, 203, 219, 235, 251, 267, 283, 299, 315, 331, 347, 363, 379, 395, 411, 427	
Electrolytic Sewage Treatment ..	270	Glasgow Exports ..	125, 31, 65, 79, 95, 111, 127, 143, 159, 175, 191, 207, 223, 239, 255, 271, 287, 303, 319, 335, 351, 367, 383, 399, 415, 431, 447	Inspection of Explosives ..	370	Manchester Exports ..	13, 29, 45, 61, 77, 93, 109, 125, 141, 157, 173, 189, 205, 221, 237, 253, 269, 285, 301, 317, 333, 349, 365, 381, 397, 413, 429	
Etanazol, Acid-proof ..	232	Glasgow Imports ..	12, 28, 44, 60, 76, 92, 108, 124, 140, 156, 172, 188, 204, 220, 236, 252, 268, 284, 300, 316, 332, 348, 364, 380, 396, 412, 428	Institute of Chemistry Examination ..	370	Manchester Imports ..	11, 27, 43, 59, 75, 91, 107, 123, 139, 155, 171, 187, 203, 219, 235, 251, 267, 283, 299, 315, 331, 347, 363, 379, 395, 411, 427	
End of the Chartered Siles ..	357	Glasgow Exports ..	125, 31, 65, 79, 95, 111, 127, 143, 159, 175, 191, 207, 223, 239, 255, 271, 287, 303, 319, 335, 351, 367, 383, 399, 415, 431, 447	Instructive Case, An ..	397	Manchester Sanitary Conference ..	10	
Engineering Works, "The Lancashire" ..	357	Glasgow Imports ..	12, 28, 44, 60, 76, 92, 108, 124, 140, 156, 172, 188, 204, 220, 236, 252, 268, 284, 300, 316, 332, 348, 364, 380, 396, 412, 428	International Health Exhibition ..	285	Manchester Soap Co., Failure of ..	10	
Erecting H ₂ SO ₄ Plant ..	371	Glasgow Exports ..	125, 31, 65, 79, 95, 111, 127, 143, 159, 175, 191, 207, 223, 239, 255, 271, 287, 303, 319, 335, 351, 367, 383, 399, 415, 431, 447	International Sewage Co., Ltd. ..	207	Manchester, Technical Instruction in ..	10	
Exports Pulp via the Canal ..	380	Glasgow Imports ..	12, 28, 44, 60, 76, 92, 108, 124, 140, 156, 172, 188, 204, 220, 236, 252, 268, 284, 300, 316, 332, 348, 364, 380, 396, 412, 428	Interesting Experiment ..	323	Manchester Water, Quality of ..	10	
Exports in 1894 ..	247	Glasgow Exports ..	125, 31, 65, 79, 95, 111, 127, 143, 159, 175, 191, 207, 223, 239, 255, 271, 287, 303, 319, 335, 351, 367, 383, 399, 415, 431, 447	Ireland, Purchasing Chemical Works ..	81	Mangold Growing, Economy of ..	10	
Essential Oils and Turpene, Aerial ..	247	Glasgow Imports ..	12, 28, 44, 60, 76, 92, 108, 124, 140, 156, 172, 188, 204, 220, 236, 252, 268, 284, 300, 316, 332, 348, 364, 380, 396, 412, 428	Irish Paint Mill, The First ..	196	Mangold's, Influence of Manure on ..	10	
Exhibition of 1894, 1895, 1896, 1897, 1898, 1899, 1900, 1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, 1910 ..	247	Glasgow Exports ..	125, 31, 65, 79, 95, 111, 127, 143, 159, 175, 191, 207, 223, 239, 255, 271, 287, 303, 319, 335, 351, 367, 383, 399, 415, 431, 447	Irish Sulphur Mines, Re-opening ..	179	Manufactories, Continuous Hours of Work in ..	10	
Exhibition, Best Super Cop ..	58	Glasgow Imports ..	12, 28, 44, 60, 76, 92, 108, 124, 140, 156, 172, 188, 204, 220, 236, 252, 268, 284, 300, 316, 332, 348, 364, 380, 396, 412, 428	Irish, Cargo of Resin for ..	241	Manufacture of Ice by Ammonia ..	10	
Exhibitors at the Royal Society Convention ..	247	Glasgow Exports ..	125, 31, 65, 79, 95, 111, 127, 143, 159, 175, 191, 207, 223, 239, 255, 271, 287, 303, 319, 335, 351, 367, 383, 399, 415, 431, 447	Isolation of Titanium ..	158	Manufacture of Wood Pulp ..	10	
Experiments, An Interesting ..	247	Glasgow Imports ..	12, 28, 44, 60, 76, 92, 108, 124, 140, 156, 172, 188, 204, 220, 236, 252, 268, 284, 300, 316, 332, 348, 364, 380, 396, 412, 428	Italy, Chemical Industry of ..	103	Manufacturers' Refuse not Wasted ..	10	
Exposition at Nippon's Works ..	71	Glasgow Exports ..	125, 31, 65, 79, 95, 111, 127, 143, 159, 175, 191, 207, 223, 239, 255, 271, 287, 303, 319, 335, 351, 367, 383, 399, 415, 431, 447	J		Manure, Concentrated ..	10	
Exposition at Nippon's Works ..	71	Glasgow Imports ..	12, 28, 44, 60, 76, 92, 108, 124, 140, 156, 172, 188, 204, 220, 236, 252, 268, 284, 300, 316, 332, 348, 364, 380, 396, 412, 428	Java Indigo ..	83	Manure, Influence on Mangolds ..	10	
Exposition at Nippon's Works ..	71	Glasgow Exports ..	125, 31, 65, 79, 95, 111, 127, 143, 159, 175, 191, 207, 223, 239, 255, 271, 287, 303, 319, 335, 351, 367, 383, 399, 415, 431, 447	Jeyes' Sanitary Compound Co., Ltd. ..	102	Manure Trade Review of 1894 ..	10	
Exposition at Nippon's Works ..	71	Glasgow Imports ..	12, 28, 44, 60, 76, 92, 108, 124, 140, 156, 172, 188, 204, 220, 236, 252, 268, 284, 300, 316, 332, 348, 364, 380, 396, 412, 428	John Dalton's Memorial ..	371	Manure Works, Animal, Rules for ..	10	
Exposition at Nippon's Works ..	71	Glasgow Exports ..	125, 31, 65, 79, 95, 111, 127, 143, 159, 175, 191, 207, 223, 239, 255, 271, 287, 303, 319, 335, 351, 367, 383, 399, 415, 431, 447	Joint Committee, Mersey and Irwell, ..	20	Manure Works, Employed, Accident at ..	10	
Exposition at Nippon's Works ..	71	Glasgow Imports ..	12, 28, 44, 60, 76, 92, 108, 124, 140, 156, 172, 188, 204, 220, 236, 252, 268, 284, 300, 316, 332, 348, 364, 380, 396, 412, 428	Julia Tait Nitrate Co. ..	87, 227	Manure Works, Government Rules for ..	10	
Exposition at Nippon's Works ..	71	Glasgow Exports ..	125, 31, 65, 79, 95, 111, 127, 143, 159, 175, 191, 207, 223, 239, 255, 271, 287, 303, 319, 335, 351, 367, 383, 399, 415, 431, 447	K		Manure Works, Obsolete ..	10	
Exposition at Nippon's Works ..	71	Glasgow Imports ..	12, 28, 44, 60, 76, 92, 108, 124, 140, 156, 172, 188, 204, 220, 236, 252, 268, 284, 300, 316, 332, 348, 364, 380, 396, 412, 428	Kauri Gum Industry of New Zealand ..	336	Manure Valuation of ..	10	
Exposition at Nippon's Works ..	71	Glasgow Exports ..	125, 31, 65, 79, 95, 111, 127, 143, 159, 175, 191, 207, 223, 239, 255, 271, 287, 303, 319, 335, 351, 367, 383, 399, 415, 431, 447	Kynoch and Co., Ltd., Messrs. ..	350	Marble Glass ..	10	
Exposition at Nippon's Works ..	71	Glasgow Imports ..	12, 28, 44, 60, 76, 92, 108, 124, 140, 156, 172, 188, 204, 220, 236, 252, 268, 284, 300, 316, 332, 348, 364, 380, 396, 412, 428	L		Margarine, Importation of ..	10	
Exposition at Nippon's Works ..	71	Glasgow Exports ..	125, 31, 65, 79, 95, 111, 127, 143, 159, 175, 191, 207, 223, 239, 255, 271, 287, 303, 319, 335, 351, 367, 383, 399, 415, 431, 447	Laboratory Hints and Appliances ..	35	" Sale of and Inspection ..	10	
Exposition at Nippon's Works ..	71	Glasgow Imports ..	12, 28, 44, 60, 76, 92, 108, 124, 140, 156, 172, 188, 204, 220, 236, 252, 268, 284, 300, 316, 332, 348, 364, 380, 396, 412, 428	Lagunas Syndicate, Ltd. ..	389, 398	" Trades Opinion on ..	10	
Exposition at Nippon's Works ..	71	Glasgow Exports ..	125, 31, 65, 79, 95, 111, 127, 143, 159, 175, 191, 207, 223, 239, 255, 271, 287, 303, 319, 335, 351, 367, 383, 399, 415, 431, 447	Lamp Accidents, Petroleum ..	24, 71, 87	Mason and Barry, Limited ..	10	
Exposition at Nippon's Works ..	71	Glasgow Imports ..	12, 28, 44, 60, 76, 92, 108, 124, 140, 156, 172, 188, 204, 220, 236, 252, 268, 284, 300, 316, 332, 348, 364, 380, 396, 412, 428	104, 125, 195, 228, 243, 275, 291, 371, 380		Mason College Chemical Society ..	10	
Exposition at Nippon's Works ..	71	Glasgow Exports ..	125, 31, 65, 79, 95, 111, 127, 143, 159, 175, 191, 207, 223, 239, 255, 271, 287, 303, 319, 335, 351, 367, 383, 399, 415, 431, 447	Lamp Explosions ..	321	Measures and Weights ..	10	
Exposition at Nippon's Works ..	71	Glasgow Imports ..	12, 28, 44, 60, 76, 92, 108, 124, 140, 156, 172, 188, 204, 220, 236, 252, 268, 284, 300, 316, 332, 348, 364, 380, 396, 412, 428	Lancaster Engineering Works ..	38	Mechanical Refrigeration in 1894 ..	10	
Exposition at Nippon's Works ..	71	Glasgow Exports ..	125, 31, 65, 79, 95, 111, 127, 143, 159, 175, 191, 207, 223, 239, 255, 271, 287, 303, 319, 335, 351, 367, 383, 399, 415, 431, 447	Lancashire, Technical Instruction in ..	101	Medal, The Faraday ..	10	
Exposition at Nippon's Works ..	71	Glasgow Imports ..	12, 28, 44, 60, 76, 92, 108, 124, 140, 156, 172, 188, 204, 220, 236, 252, 268, 284, 300, 316, 332, 348, 364, 380, 396, 412, 428	Lard Stiffening ..	321	Meldrum Bros., Messrs. ..	10	
Exposition at Nippon's Works ..	71	Glasgow Exports ..	125, 31, 65, 79, 95, 111, 127, 143, 159, 175, 191, 207, 223, 239, 255, 271, 287, 303, 319, 335, 351, 367, 383, 399, 415, 431, 447	Lauraro Nitrate Co., Ltd. ..	82	Melting Points and Composition of ..	10	
Exposition at Nippon's Works ..	71	Glasgow Imports ..	12, 28, 44, 60, 76, 92, 108, 124, 140, 156, 172, 188, 204, 220, 236, 252, 268, 284, 300, 316, 332, 348, 364, 380, 396, 412, 428	Law Costs and Mr. Commissioner Kerr ..	82	Candle Materials ..	10	
Exposition at Nippon's Works ..	71	Glasgow Exports ..	125, 31, 65, 79, 95, 111, 127, 143, 159, 175, 191, 207, 223, 239, 255, 271, 287, 303, 319, 335, 351, 367, 383, 399, 415, 431, 447	Lead and Copper Smelting, Principles ..	102	Memoranda, Official ..	10	
Exposition at Nippon's Works ..	71	Glasgow Imports ..	12, 28, 44, 60, 76, 92, 108, 124, 140, 156, 172, 188, 204, 220, 236, 252, 268, 284, 300, 316, 332, 348, 364, 380, 396, 412, 428	Lead Industries of the Tyne, The ..	43	400		
Exposition at Nippon's Works ..	71	Glasgow Exports ..	125, 31, 65, 79, 95, 111, 127, 143, 159, 175, 191, 207, 223, 239, 255, 271, 287, 303, 319, 335, 351, 367, 383, 399, 415, 431, 447	Lead Mining Industry in Spain ..	68	Memorial, John Dalton's ..	10	
Exposition at Nippon's Works ..	71	Glasgow Imports ..	12, 28, 44, 60, 76, 92, 108, 124, 140, 156, 172, 188, 204, 220, 236, 252, 268, 284, 300, 316, 332, 348, 364, 380, 396, 412, 428	Lead and Tin Mining in India ..	68			
Exposition at Nippon's Works ..	71	Glasgow Exports ..	125, 31, 65, 79, 95, 111, 127, 143, 159, 175, 191, 207, 223, 239, 255, 271, 287, 303, 319, 335, 351, 367, 383, 399, 415, 431, 447	Lead Works, Death in ..	190			
Exposition at Nippon's Works ..	71	Glasgow Imports ..	12, 28, 44, 60, 76, 92, 108, 124, 140, 156, 172, 188, 204, 220, 236, 252, 268, 284, 300, 316, 332, 348, 364, 380, 396, 412, 428	Leaves, Gutta-percha from ..	382			
Exposition at Nippon's Works ..	71	Glasgow Exports ..	125, 31, 65, 79, 95, 111, 127, 143, 159, 175, 191, 207, 223, 239, 255, 271, 287, 303, 319, 335, 351, 367, 383, 399, 415, 431, 447	Leads Gas Supply ..	79, 147			
Exposition at Nippon's Works ..	71	Glasgow Imports ..	12, 28, 44, 60, 76, 92, 108, 124, 140, 156, 172, 188, 2					

	Page		Page		Page
Committee of Salford ..	322	Macpherson, D., and Co., Ltd. ..	74	O'Neil, C. ..	44
ge Pollution of the ..	354	Mann and Sons, Ltd. ..	302	Swansea, Lord ..	44
1, The 1-9, 24, 73, 89, 104		Manningham Dyeworks Co., Ltd. ..	374	Wright, C. R. A. ..	41
164, 181, 196, 212, 228, 244		Mear and Green, Ltd. ..	197	Obnoxious Manure Works ..	403
303, 324, 340, 356, 372, 387		Melcath, W., Ltd. ..	74	Occupations, Dangerous ..	158
Ford for ..	52	Midland Stoneware Pipe Co., Ltd. ..	213	Oekonometer, Arndt's ..	36
Chemical Trade ..	7	Mills E. and A., Ltd. ..	26	Official Memoranda:—68, 144, 190, 256, 336	400
o. in Liquidation ..	239	Milton Ink and Chemical Co. ..	341	Oil Adulteration Laws in Portugal ..	68
tion Fines ..	87, 103	Mitcham Japan and Varnish Co., Ltd. ..	341	Oil, Advance in Cod Liver ..	120
tion, Sensible Fine for ..	417	Nassau Manganese Mines, Ltd. ..	245	Oil as a Motive Power ..	414
et. The Liverpool 1-8, 24		Newman and Owston's Colour and Chemical Co., Ltd. ..	245	Oil Fire at Baku ..	323
149, 164, 180, 196, 212, 228		Nitrate Producers Steamship Co., Ltd. ..	182	Oil in Bombay ..	339
199, 303, 324, 340, 356, 373		Nitrogen Co., Ltd. ..	150	Oil in Bulk to China ..	401
ction of U.S.A. ..	402	Norrington, C. and Co., Ltd. ..	74	Oil Company, the Midland in Liquidation ..	339
ust in ..	117	North British Plumbing Co., Ltd. ..	352	Oil Drilling Fruitless in the U.S.A. ..	319
iring in ..	158	Park House Dyeing Co., Ltd. ..	389	Oil Engines, Manchester ..	351
etallurgy, Institute of ..	318	Peat Charcoal Iron and Fuel Works, Ltd. ..	166	Oil Flashpoint of Burning ..	307
Chemical Market, The:—		Peat Products Ltd. ..	122	Oil Fuel in Foreign Navies ..	158
83, 104, 120, 133, 149, 164		Perfect Pavement Company, Ltd. ..	90	Oil Industry, The Scotch ..	275, 307
228, 244, 260, 276, 291, 308		Phelps, W. H. and Co., Ltd. ..	90	Oil Lamp Explosions ..	321
372, 387, 404, 420.		Pure Carbon Co., Ltd. ..	261	Oil Lamp, The Industrial ..	37
in ..	232	Sharp Bros. Soap & Perfumery Co., Ltd. ..	341	Oil and Paraffin Industries, The Scotch in 1894 ..	69
er Works, Fire at ..	85	Shill (Patents) Gold Extracting Co., Ltd. ..	106	Oil, Proposed Advance in Burning ..	180
roleum ..	419	Smoke and Fumes Annihilator, Ltd. ..	10	Oil Producers Agreement in Russia ..	321
inding Mill ..	132	Soc. Anglo-Francaise des Parfumes Perfect, Ltd. ..	134	Oil Trade of Singapore ..	256
Oil as a ..	414	Sopressa Antimony Mines ..	277	Oil Works, Fatality at ..	196
N		South African Saltpetre Fields, Ltd. ..	182	Oleo-Cheese ..	307
ordinary Output of ..	195	Steinoff, Sons, and Muir, Ltd. ..	389	Olive Oil, Pending Scarcity of ..	239
stry, Russian ..	256	Subra Fibre Co., Ltd. ..	357	Olives Rise in Price of ..	103
ian, Duty on ..	225	Tanoch Chemical Co., Ltd. ..	292	Onion and Potato Cultivation ..	227
Oil Fuel in ..	158	Tar Products Sales Committee, 1895, Ltd. ..	74	Opposition to the Salt Union ..	419
he Weaver ..	191	Thames Block Fuel, Ltd. ..	277	Our Bookshelf:—	
u, Nickel in ..	190	Tunstall and Co., Ltd. ..	10	Alkali Inspector's Report, 31st ..	402
Works on the Tees-side ..	322	United Kingdom Oil and Meal Co., Ltd. ..	213	Calcareous Cements. G. R. Red ..	338
all Inspector ..	403	Valdene Chemical Co., Ltd. ..	341	Calvert's Mechanics' Almanac ..	223
all Court ..	87	Vyne and Everett, Ltd. ..	325	Cellulose. Cross and Bevan ..	354
r Mines, Ltd. ..	373	Wandsworth Chemical Works, Ltd. ..	246	Chemical Handicraft. J. J. Griffin and Sons ..	40
luminating Co., Ltd. ..	341	Warne, W., and Co., Ltd. ..	106	Chemical Laboratory Labels, Part II. W. H. Symonds ..	223
reign Syndicate, Ltd ..	26	Washington Coal Co., Ltd. ..	122	Chemical Manufacturers' Directory ..	223
ompound and General ..	26	Water Softening and Purifying Patents, Ltd. ..	150	Chemists and Their Wonders ..	354
Ltd. ..	277	Webster T. D., and Son ..	181	F. M. Holmes ..	354
ug Co., Ltd. ..	26	Wenger's, Ltd. ..	374	Electroplaters' Handbook. G. E. Bonney ..	223
candescant Share Co., ..	122	West London Paper Mill Co. ..	293	Elementary Text Book of Metallurgy. A. H. Sexton ..	302
ach Works, Ltd. ..	74	Woolley, James, Sons and Co., Ltd. ..	58	Elementary Practical Chemistry. J. T. Hewitt and J. T. Pope ..	223
Co., Ltd. ..	58	Woolscroft G., and Son, Ltd. ..	10	Maschinenellen Hilfsmittel der Chemische Technik. A. Parnicke ..	40
ck and Tile Works, Ltd. ..	166	Woolston Brick and Tile Co., Ltd. ..	26	Newspaper Press Directory ..	338
Son, Ltd. ..	134	New Cyanide Co. Reported ..	195	Organic Chemistry. J. S. Scarf ..	338
um, Junr. and Co., Ltd. ..	166	New Element (?) Another: Helium ..	209	Researches on the Arsenates. T. Graham (1833) ..	223
cts Co., Ltd. ..	134	New Explosives Co., Ltd. ..	102	Recherches de Chimie, etc., à l'Agriculture. A. Petermann ..	223
ry Co., Ltd. ..	26	New Extracting Apparatus ..	53	Salphuric Acid and Alkali Manufacture. G. Lunge ..	258
mbia Oil and Guano ..	198	New Incandescent Light ..	317	Tables, &c., for Qualitative Analysis. M. P. Muir ..	223
ing and Mineral Co., ..	245	New Nitrate Syndicate, Ltd. ..	399	Theoretical Chemistry. W. Nernst. Translated by C. S. Palmer ..	302
ary Soap Co., Ltd. ..	261	New Process for Extracting Gold ..	223	Treatise on Chemistry. Sir H. Roscoe and C. Schorlemmer ..	40
es, Ltd. ..	26	New Rivers Pollution Bill ..	273	Output of Gold ..	103
es Co., Ltd. ..	245	Nickel, New Caledonian ..	190	Output of Naphtha, Extraordinary ..	195
onia Works, Ltd. ..	292	Nickel, Prospects in ..	180	Oxygen Bottle? Where was the ..	334
, and Co., Ltd. ..	373	Nitrate Combine, The ..	418	Oxygen Cylinder Explosion Inquiry:—	225, 237, 238, 211, 222.
Dutch Co., Ltd. ..	74	Nitrate Combine, Colonel North on the ..	353	Oxyhydrogen Accumulator ..	369
rown Ltd. ..	292	Nitrate Combine, Why it was not Resumed ..	320	Ozonising Appliance, Improved ..	222
rtland Cement Co., Ltd. ..	325	Nitrate Fields, South African ..	87	P	
Evans, Ltd. ..	261	Nitrate, Indigo and Tallow in 1894 ..	5	Paccha and Jazpampa Nitrate Co., Ltd. ..	319
candescant Gas Light ..	341	Nitrate Industry, The ..	333	Paint Merchant, Failure of a ..	286
gar Brewery Co., Ltd. ..	309	Nitrate Industry, Troubles in the ..	414	"Mill, The First Irish ..	196
ic Manufacturing Co., ..	90	Nitrate, Prospective Position of ..	157	"Works, Fire at ..	104
Co., Ltd. ..	325	Nitrate Sales in Chili ..	148	Paper, Indigo Blue Surface Coloured ..	177
il Refining Co., Ltd. ..	106	Nitrate Sales, Legality of the Chilean ..	385	Paper Making, Adanson's Fibre in ..	307
Mitchell, Ltd. ..	197	Nitrate of Soda from Bilge Water ..	323	Paper Mills, Amalgamation of ..	228
ural Mineral Water Co. ..	10	Nitrate of Soda, Poisoning Cattle by ..	323	Paper Mill Burnt Down ..	322
and Co., Ltd. ..	213	Nitrate of Soda Returns ..	158	Paper Mill, Fatality at ..	370
m Co., Ltd. ..	10	Nitrate Statistics ..	243, 306, 386	"Fire at a ..	87
ing Co., Ltd. ..	421	Nobel Dynamite Trust ..	290, 350, 369	Paper Makers' Column ..	45, 147, 177, 258, 401
ed Co., Ltd. ..	405	Nobel's Works, Explosion at ..	71	Parcels to Switzerland ..	131
Ltd (Glos.) ..	421	"Noddling" Dyed Yarns ..	130	Paraffin in Crude Anthracene ..	322
haw and Co., Ltd. ..	292	Nonpolarising Primary Battery ..	120	"Combine, The Proposed ..	65
td. ..	26	North Wales, Gold Mining in ..	368	Parliamentary Jottings:—117, 130, 158, 176	191, 209, 225, 257, 287, 321, 354, 368, 402
o. of Manchester, Ltd. ..	261	Norway Wood Pulp Industry ..	190	Partnerships Dissolved:—10, 26, 58, 74, 90, 106, 122, 134, 150, 166, 198, 213, 229, 246, 278, 293, 309, 325, 341, 374, 389, 405	
rtland Cement Co., Ltd. ..	150	"Not Wisely but Too Well" ..	302	Patents in 1894 ..	6
sical Co., Ltd. ..	134	Notices ..	86, 306, 372	Patent Law Amendment ..	286
atson and Harris, Ltd. ..	277	Nuisance, An Easily Cured ..	227	Patent Laws ..	287
Grane Brick and Tile ..	405	O			
and Co., Ltd. ..	10	Oaklands Oil Co., Ltd. ..	304, 307		
urble Co., Ltd. ..	325	Obituary:—			
it Developing and Fluid ..	90	Allison, H. J. ..	42		
o., Ltd. ..	181	Bird, T. ..	88		
ber Co., Ltd. ..	213	Cooke, J. P. ..	44		
ndicate, Ltd. ..	150	Deeley, W. C. ..	386		
and Wallace Ltd. ..	341	Dwight Dana, Professor ..	275		
emical Co., Ltd. ..	90	Fremy, E. ..	43		
nitary Protection Asso- ..	90	Galloway, J. ..	44		
td. ..	90	Hassall, A. H. ..	44		
		Helmholtz, H. L. F. ..	43		
		Hughes, F. R. ..	195		
		Jablochokoff, P. ..	44		
		Lockwood, Crosby ..	195		

Q	Page	Salt, Shipments to the E. Indies	Page	State of the Chemical Trades:—190, 274	Page	Tyne Exports:—15, 31, 63, 79, 95, 111, 127	Page
Queensland, Vitriol Works for	120	" " from Liverpool	158	334, 415		130, 155, 171, 187, 203, 219, 235, 251, 267	
Query	421	" " Union, Ltd.	129, 145, 173	Statistics, Nitrate	243, 306, 386	281, 299, 315, 331, 347, 373, 379, 395, 411	
R		" " Dividend	116	Steel Barrels	225	427	
Railway Station, Fire at	143	" " Litigation	104	" Stiffening, Lard	323	Tyne Imports:—13, 28, 60, 77, 93, 108, 124	
Ramie, Cultivation of	353	Sandbach Sewage Scheme	10	Stockport Sewage Scheme	19	137, 153, 168, 184, 200, 216, 232, 248, 264	
Ramie, Increased Revival of	256	San Donata Nitrate Co., Ltd.	350	Storage of Bleach	258	280, 296, 312, 328, 344, 360, 376, 392, 408	
Rand, Gold Production in	173, 259	" " Jorge	304	Subsides in Cheshire Salt District	351	424	
Rare Metals and Alloys	227	" " Patricio	176, 359	Suffocated by CO ₂	371	Tyne, Lead Industries of the	41
Ravenhead Glass Works	57	" " Sebastian	304	Sugar Beet Cultivation	97		
Recent Customs Decision	179, 259, 367	Santa Rita	319	Sugar Beets, The Yield of	7		
Reconstitution of the Weaver Trust	241	Sanitary Conference	227, 269, 273	Sugar Crisis in Austria	161		
Refracting Pressure Gauge	83	Scotch Oil Industry	275	Sugar, The Fall in Beetroot	7		
Refining Petroleum, Effect of Temperature	145	Sanitas Co., Ltd.	132, 160	Sugar Industry in Austro-Hungary	7		
Refrigeration, Mechanical, in 1894	163	Scarcity of Olive Oil, Pending	239	" " The Cuban	190		
Registration of Chemical Works	71	Scotch Oil Industry	397	Sugar Refiners, Rival	148		
Regulations for Wool Sorting	242	Scottish Oil and Paraffin Industry in 1894	69	Sulphate of Ammonia for Mangold Growing	323		
Regulations for Wool Sorting, The Government	209	Selected Correspondence:—		Sulphur in Pyrites, Estimation of	305		
Re-lighting Safety Lamps	420	Chrome Lead Colours. Progress	179	Sulphur Mines, Re-opening Irish	179		
Remarkable Explosion	303	" " Justice	226	Sulphur in Pyrites, Estimation of	174		
Reminiscences of John Dalton	54	" " Foreman Dyer	236	Sulphuretted Hydrogen Liquid	37		
Reports of Companies:—103, 132, 145, 160, 175, 192, 207, 274, 290, 304, 319, 338, 350, 368, 384		Sensible Fine, A	20	Sulphuric Acid Plant, Erecting	371		
Report on Hull Oils, Paints, and Colours:—		Separation of Argon	239	Superphosphate, Reversion of	271		
—5, 25, 35, 73, 90, 105, 121, 134, 150, 165, 181, 197, 213, 229, 245, 277, 293, 309, 324, 339, 355, 373, 389, 405, 420		Setting for Vitriol Pans, An Improved Sewage, Bacteriology of	114	Swedish Duty on English Pens	254		
Report on Manure Materials:—9, 24, 57, 74, 88, 104, 120, 133, 148, 164, 180, 196, 212, 228, 244, 260, 276, 292, 307, 324, 339, 355, 373, 389, 405, 420		" " Scheme, Bolton	164	Switzerland, Parcels to	131		
Report on Tyne Chemicals:—9, 25, 57, 72, 89, 105, 121, 133, 150, 165, 180, 197, 213, 229, 245, 277, 293, 309, 324, 340, 357, 373, 389, 405		" " Schemes	19	Sydney Tariff, The New	403		
Request in Face	1	" " Effluents, Filtration of	416				
Research, Fellowship of City and Guilds	87	" " Experiments, Salford	7	T			
Ricin, A Cargo for Islam	243	" " Purification Standards	120	Tactics of Trade Unions	275		
Ricin and Turpentine Production in India	244	" " Treatment, Bacteriological	306	Tallow, Nitrate, and Indigo in 1894	5		
Returns Nitrate of Soda, The	158	" " Electrolytical	403	Tamarugal Nitrate Co., Ltd.	370		
Revolutions, More Ice Cream	148	Sharon Chemical Company, Ltd.	24, 130	Tanning Materials in 1894	3		
Reversion of Superphosphates	271	She was Too Late	88	Tar and Ammonia Products Market:—			
Review of Manure Trade, 1894	89	Shellac Industry, The Indian	20	8, 24, 57, 72, 88, 104, 120, 133, 148, 164, 180, 196, 211, 228, 244, 260, 276, 292, 307, 323, 339, 356, 372, 387, 404, 420			
Review of the Ramie Industry	256	Ship Canal, Pollution of the	302	Tar Products Sales Committee	66		
Rio Tinto Co., Ltd.	244	" " Pulp and Esparto <i>via</i> the	386	Tariff of Argentine	144		
Rival Corn Seed Cleaning Machines	271	" " Salford Corporation	163, 209	Tariff Bill, The German Customs	7		
Rival Sugar Refiners	148	" " and Wood Pulp Trade	24, 103	Tariff of British India	144		
Rivers Murray and Irwell Joint Committee:—27, 100, 312		Shot Firing in Mines	158	Tariff of Laurence	400		
Rivers Pollution Bill, A New	271	Singapore, Oil Trade in	254	Tar Separator, The Centrifugal	41		
River Pollution Case, The Salford	66	Slag Chimney, A	318	Tasmania Customs, Tariff of	68		
River Pollution Cases	419	Sludge Steamer, The Salford	148	Technical Chemistry	240, 256		
River Pollution, The Church Inquiry	285	Smelting Lead and Copper, Principles of	102	Technical Education, Lord Playfair on	23		
River Purification, The Hamours of	301	Smoke, The Legislation of	17	" " Flintshire	23		
Romanian Explosives Co.	176	" " Preventing Appliances, Inspection	386	" " Lancashire	101		
Royal Agricultural Society, President	306	Smoke Presenting Invention, An Illustrated	275	" " Manchester	2		
Royal Society's Conversazione, Exhibitions at	307	Smoke Prosecutions	71, 419	Technical School, The People's Palace	275		
Rubbers, Artificial	163	Smoke Question, The	103	Teesside, New Chemical Works on	323		
Rubber Works, Fire at	104	Snow, Salt To Remove	99	Telescopical Bunsen Burner	36		
Roundabout Combine of Electrolytic Processes	159	Soap Co., Failure of	80	Tellurides, Discovery of	307		
Russia and Belgium, Enterprise in	371	" " Cutting Machine	23	Testing Anthracene	288		
Russian Naphtha Industry	256	" " Detecting in Lubricants	23	Testing Westphalite	209		
Russian Oil Producers' Agreement	321	" " Mixing Machine	239	Text Book Diction	173		
S		" " Works for Egypt	303	Textile Soaps	51		
St. Vincent Tariff	336	Soaps, Textile	51	Tharsis Sulphur and Copper Co.	224		
Sale of Chilean Nitrate Grounds	323	Society of Chemical Industry:—		274, 290			
Salford Corporation and Ship Canal	209	Glasgow Section	70, 143, 159, 238	Thermometers, An Aluminium Scale	35		
" " River Pollution Case	66	Liverpool	70, 131, 299, 307	Three Sets Press Roll System	82		
" " Sewage Expenses	7	London	8, 87, 146, 290	Tin and Lead Mining in India	68		
" " Sludge Steamer	148	Manchester	18, 146, 159, 238	Tips for Traders	179, 226, 290, 354		
Salt in British India	144	Nottingham	292, 337	Titanium, Isolation of	158		
Salt District of Cheshire, Subsidence in	351	Soda, Hypsulphite of	352	Tobacco Growing in Kent	403		
Salt Duty in Bulgaria	144	Sodium Silicate, Another Use for	179	Townley Ironworks, The	37		
" " Industry of Teesside	275	Solder, Aluminium	20	Town's Refuse, Manufacture of	274		
" " Reduced Duty on in, Finland	69	Solid Paraffin Combine	98, 132, 180	Trade Revival in Newfoundland	403		
" " to Remove Snow	99	Solubility of Basic Slag	114	Trade Titles Infringement	221		
		Some Light on " Argon "	227	Trade Unions Tactics	275		
		South African Cyanide Gold Recovery	195	Transport of Mineral Oil from Baku	401		
		" " African Nitrate Fields	87	Trinidad Customs Tariff	336		
		Spain, Lead Mining Industry in	68	Troubles of Imperfect Combustion	87		
		" " Production of Pyrites in	294	Troubles in the Nitrate Trade	414		
		Spanish Petroleum Duty, Increased	403	Tunisian Oil Free to France	69		
		Special Rules for Animal Manure Works	205	Market for British Goods	337		
		Spent Oxide Extracting Apparatus	35	Turnip, Notes on American	5		
		Spirit for Incandescent Lighting	323	Tyne Chemical Report:—9, 25, 57, 72, 89, 105, 121, 133, 150, 165, 180, 197, 213, 228, 245, 261, 276, 292, 309, 324, 340, 357, 373, 387, 404, 430			
		Stains for Wood	119	Tyne Chemical Trade, The	145		
		Stralsund Petroleum Trade	397	Tyne Chemical Trade, Dispute in	87		
		Standards for Sewage Purification	199				
		Starch Works, Fire at	195				

WALKER BROS., ENGINEERS, PAGEFIELD IRONWORKS, WIGAN.

WALKER'S PATENT
R COMPRESSING ENGINES.
S COMPRESSING ENGINES.
70,000 I.H.P. ALREADY AT WORK.

WALKER'S PATENT
HAUST AND BLAST FANS.

EVER POLLUTION

DYERS, CALICO PRINTERS, AND OTHERS
ily PURIFY THEIR WASTE WATERS by the simple and inexpensive
ALUMINO-FERRIC PROCESS.

Full Particulars on application to—

R SPENCE & SONS, Manchester Alum Works, MANCHESTER.

R. W. GREEFF & CO., EASTCHEAP, LONDON, E.C.

IMPORTERS OF

BEST SULPHATE OF ALUMINA.
RIDE OF CHROME (Patented). ANTIMONY SALTS.
CRYSTAL ALUM. HYPOSULPHITE OF SODA.
SUGAR OF LEAD, WHITE AND BROWN.
OXIDE, PURE ACETIC, TANNIC, & SALICYLIC
DS, NITRATE & CHLORIDE OF BARIUM, &c.

ALITIES:—

SH 58% Phosphoric Acid	Castor Oil	Amidol, Metol, Glycin,
ES Acetates	Olive Oil	Thiocarbamid and other
AKE Oxalic Acid	Essent. Oils	Photographicals,
N Tartaric Acid	Glucose	Lumieres,
SALTS Salicylic Acid	Grape Sugar	Dry Plates,
Carbolic Acid	Cane Syrup	&c., &c.
Camphor	Treacle	
OPPER Stearine	Nitrate of Silver	
HATES Glycerine	(Pure)	
DES OLEINE		

FUERST BROS.
IMPORTERS—Commission Merchants—EXPORTERS.
HEADQUARTERS
FOR ALL
HEAVY OR FINE
CHEMICALS,
Pharmaceutical Products,
Photographic Developers,
Drysalteries and Drugs,
Also OILS and PRODUCE.
LONDON: 17, Philpot Lane, E.C. and 2 & 4, Stone Street, NEW YORK.
SAMPLER AND PRICES ON APPLICATION.

Tenders.

SHEFFIELD UNITED GASLIGHT COMPANY.
(NEEPSSEND STATION.)

TO IRONFOUNDERS, ETC

THE Directors of this Company
invite TENDERS for the Manufacture and Delivery
(without erection) of CASTINGS required in the Con-
struction of Four Purifiers, 62 ft. by 20 ft., with
COLUMNS and GIRDEKS, for their No. 3 Purifying-
House.

Drawings may be seen, and Bill of Quantities, with
Specification and Form of Tender, obtained, on applica-
tion to the Engineer, Mr. Fletcher W. Stevenson.

Sealed Tenders endorsed "Tender for Castings for
Purifiers," to be delivered (by post) to the undersigned,
at the Company's Offices, on or before the 26th day of
January next.

The Directors do not bind themselves to accept the
lowest or any tender.

HANBURY THOMAS,

General Manager.

Commercial Street, Sheffield,
January 5th, 1895.

SHEFFIELD UNITED GASLIGHT COMPANY.
(NEEPSSEND STATION.)

TO BOILER MAKERS, CONTRACTORS, ETC.

THE Directors of this Company
invite TENDERS for the Manufacture, Delivery,
and Erection of Four WROUGHT-IRON PURIFIER-
COVERS, 20 feet square, for their No. 3 Purifying-House.

Copy of the Drawing and Specification, with Form of
Tender, can be obtained on application to the Engineer,
Mr. Fletcher W. Stevenson.

Sealed tenders, endorsed "Tender for Purifier-Covers,"
to be delivered (by post) to the undersigned at the
Company's Offices, on or before Saturday, the 26th day of
January next.

The Directors do not bind themselves to accept the
lowest or any tender.

HANBURY THOMAS,

General Manager.

Commercial Street, Sheffield,
January 5th, 1895.

BOROUGH OF NELSON.

GAS DEPARTMENT.

THE Gas Committee of the above
Corporation invite TENDERS for FIRE-CLAY
RETORTS.

Quantities and Form of Tender may be obtained upon
application to Mr. Foster, Gas Manager.

Sealed Tenders, endorsed "Retorts," to be sent to me not
later than Wednesday, the 30th day of January, 1895.

By order,

R. M. PRESCOTT,

Town Clerk.

Town Hall, Nelson,
Jan. 11th, 1895.

Miscellaneous.

Replies to Advertisements addressed to the
"Chemical Trade Journal" Office are forwarded to
Advertisers, post free.

WANTED, by an Experienced

Analyst, who has spent over four years in one of
the Leading Laboratories in London, a POSITION in a
WORKS or LABORATORY, with opportunities of
enlarging his experience in Technical and Engineering
Chemistry; moderate salary only required.—Apply, F. W.,
9, Hackins Hey, Liverpool.

WANTED.—SITUATION in

Chemical Works, as FOREMAN or any place of
trust; age, 30; twelve years' experience; sulphuric,
muriatic, and nitric acids, &c.; good references, &c.—
Address, "Acid," Chemical Trade Journal Office, Man-
chester.

WORKS CHEMIST, with a varied

experience, requires a SITUATION as CHEMIST,
MANAGER, or FOREMAN; good analyst; excellent
qualifications and references.—Apply, E. W., Chemical
Trade Journal Office, Manchester.

MACTEAR FURNACE For Sale;

in thoroughly good order, not been working long.
For particulars, etc., apply to "Furnace," Chemical
Trade Journal Office, Manchester.

FILTER PRESS: second-hand, in

good condition, WANTED; containing from 12 to
18 plates (iron), size about 2 ft. square.—Address, with
price, makers name, and full particulars, to John Nicholson
and Son, Ltd., Chemical Works, Hunslet, Leeds.

CORRESPONDENCE SOLICITED.

Miscellaneous.—Cont.

NEW Inventions and Specialities in Oils, Greases, Soaps, Paints, Varnishes, Enamels, Blackings, Blues, Polishers, etc., etc., practical working recipes with latest improved English, Continental, and American methods, Prize and Gold Medal Brands, cheapened substitutes, etc. Any samples matched; full lists sent.—Address, "Experts," Horncastle's, Cheapside, London.

NO Laboratory complete without **NELSON'S PATENT AUTOMATIC BLAST FURNACES**. For bench or floor. No blower, no pump, no dust, no smoke, no dirt, no trouble. The most powerful, most compact, most economical Portable Furnaces in existence. Invaluable for Analysis, Metallurgy, &c. &c. Illustrated particulars, stamp.—**NELSON & SONS**, Shirland Works, Twickenham, London, S.W.

OLIVOLINE and ATEROLINE. Two perfect non-gumming Lubricating Oils, 20 years in use. Made to suit every class of machinery ashore or afloat. Gentlemen who can influence business are offered liberal terms. Sole Makers, **DUNCAN, WATSON & Co.**, Oil Manufacturers and Mill Furnishers, Dashwood House, New Broad-street, London, E.C.

TO BE SOLD, the **LANCASHIRE MANURE COMPANY'S WORKS** at Widnes with Machinery and 24,400 square yards of Freehold Land.—Address J. Hosking, 16, Fenwick Street, Liverpool.

SULPHATE of Lime, calcined, For Sale, cheap, in large and regular quantities.—Address **Sadler & Co., Limited**, Middlesbrough.

AMMONIA, all qualities and strengths. Enquiries solicited. **BROTHERTON & Co.**, Birmingham, Leeds, and Wakefield.

FILTER PRESS FOR SALE: 12 in. diam. plates; Johnson's make; good order; very cheap.—**R. W. Andrews**, 24, Grays Inn Road, London, W.C.

PRACTICAL VARNISH MAKER requires SITUATION as MANAGER. Over 20 years' experience in making all first-class Oil and Spirit Varnishes, Stains, Blacks, Compositions, etc. Eleven and a-half years late Maker and Manager of Varnish Department for Messrs. Goodlass, Wall and Co., Liverpool.—Address **J. E. Gould**, 27, Holland-street, Fairfield, Liverpool.

WANTED. SITUATION as **CHEMICAL PLUMBER and LEAD BURNER**. Good references given.—Address: "Plumber," *Chemical Trade Journal*.

HARPER'S LIST

OF ACCESSORIES for the TRANSMISSION of POWER, viz.:—BELT PULLEYS, ROPE PULLEYS, GEAR WHEELS, SHAFTING, COUPLINGS, PEDESTALS, FIXINGS; appears on Pages 14 and 15 of the first *Chemical Trade Journal* of each month.

FULLER'S BONE STEAMER.

Softens the Bones without extracting any of the Nucleous Substance.



Extraction of the Grease within an hour.

ESTIMATES FOR COMPLETE BONE STEAMING AND GRINDING PLANT. GRINDING MACHINERY ON EVERY DESCRIPTION OF MATERIAL.

M. FULLER, Jun., 8, Great Charles Street, Birmingham.

BALE & CO. OXIDE OF

SULPHURIC ACID, SULPHATE, PAINT, AND CHEMICAL MERCHANTS.

AGENTS for HOUSE'S JOINTING and other CEMENT, SULPHATE ENRICHMENT APTS., TUBES, FITTINGS, PYE'S BREEZE SCREWS, kinds of GAS and CHEMICAL APPLIANCES.

120 & 121, NEWGATE STREET, LONDON

Telegrams: "BOGORE, LONDON."

STONEWARE ACID PANS, COCKS, RECEIVERS

JAS. STIFF & SONS

LAMBETH, LONDON, S.E.

MANUFACTURE EVERY KIND OF VITRIFIED STONE

CHEMICAL APPARATUS

INSULATORS, BATTERY JARS, POROUS CELLS, BOTTLES, CONDENSING WORMS, PLUMBAGO & FIRE-CLAY CRUCIBLES

PURE SULPHUROUS ACID

SULPHITES AND BISULPHITES OF LIME, SODA, FOR EXPORT.

S. KEYS & CO. Limited, WEST BROMWICH

BLAYDON MANURE AND ALKALI COMP.'S
PURE WHITE SULPHATE OF ALUMINA
BLANC FIXE, CHLORIDE, NITRATE
AND SULPHIDE OF BARIUM.

UNITED ALKALI COMP.'S

HYPO-SULPHITE OF SODA,

WALTHER FELD & CO.'S

PURE PRECIP. CARBONATE OF BARYTES

Also Hydrate and Anhydrous Alumina, Chloride and Carbonate of Alumina, Aluminate of Soda, Hydrate of Barium, &c.

Agents: **JULIUS HULSEN & CO., NEWCASTLE-ON-TYNE**

CANNINGTON, SHAW & CO., LIMITED

CARBOYS.

SHERDLEY GLASSWORKS, ST. HELEN

Liverpool: Exchange Chambers
Glasgow: West Campbell-st.

WALKER BROS., ENGINEERS, PAGEFIELD IRONWORKS, WIGAN.

WALKER'S PATENT
FOR COMPRESSING ENGINES.
AS COMPRESSING ENGINES.
70,000 I.H.P. ALREADY AT WORK.

WALKER'S PATENT
EXHAUST AND BLAST FANS.

RIVER POLLUTION

DYERS, CALICO PRINTERS, AND OTHERS
readily PURIFY THEIR WASTE WATERS by the simple and inexpensive
ALUMINO-FERRIC PROCESS.

Full Particulars on application to—

ER SPENCE & SONS, Manchester Alum Works, MANCHESTER.

R. W. GREEFF & CO., EASTCHEAP, LONDON, E.C.

IMPORTERS OF

PUREST SULPHATE OF ALUMINA.
CHROMIUM OXIDE OF CHROME (Patented). ANTIMONY SALTS.
CRYSTAL ALUM. HYPOSULPHITE OF SODA.
SUGAR OF LEAD, WHITE AND BROWN.
OXIDE, PURE ACETIC, TANNIC, & SALICYLIC
ACIDS, NITRATE & CHLORIDE OF BARIUM, &c.

SPECIALITIES:—

ASH 58% Phosphoric Acid	Castor Oil	Amidol, Metol, Glycin,
ASHES Acetates	Olive Oil	Thiocarbamid and other
COCAINE Oxalic Acid	Essent. Oils	Photographicals,
COCHINEAL Tartaric Acid	Glucose	Lumieres,
DIAMMONIUM Sulfuric Acid	Grape Sugar	Dry Plates,
DIAMMONIUM Carbolic Acid	Cane Syrup	&c., &c.
DIAMMONIUM Camphor	Treacle	
DIAMMONIUM Stearic Acid	Nitrate of Silver	
DIAMMONIUM Glycerine	(Pure)	
DIAMMONIUM OLEINE		

IMPORTERS—Commission Merchants—EXPORTERS.
FUERST BROS.
FOR ALL
HEAVY OR FINE
CHEMICALS,
Pharmaceutical Products,
Photographic Developers,
Drysalteries and Drugs,
Also OILS and PRODUCE.
LONDON: 17, Philip Lane, E.C. and 2 & 4, Stone Street, NEW YORK.
SAMPLER AND PRICES ON APPLICATION.

Tenders.

THE Middleton Corporation are prepared to RECEIVE TENDERS for the following Articles, required at the Gas Works during the ensuing year:—Wet and Dry Gas Meters, Tubes and Fittings, Lead Piping, Retorts, Fire Bricks and Fire Clay, Lime, and Sulphuric Acid, delivered at the Gas Works, Middleton, free of Carriage.

Further particulars may be obtained from Mr. T. Duxbury, Gas Manager.

The Corporation do not bind themselves to accept the lowest or any Tender.

Tenders addressed to the Chairman of the Gas Committee, endorsed "Tender for Meters," "Tubes and Fittings," "Lead Piping," "Retorts, etc.," "Lime," or "Sulphuric Acid," as the case may be, must be delivered at my office, on or before Wednesday, the 20th day of February, 1895.

FREDERICK ENTWISTLE,
Town Clerk.

Town Hall, Middleton, nr. Manchester,
23rd January, 1895.

THE VESTRY OF THE PARISH OF ST. MARY, BATTERSEA.

THE Vestry of the Parish of St. Mary, Battersea, are prepared to RECEIVE TENDERS for the SUPPLY of DISINFECTANTS for One, Two, or Three Years (at the option of the Vestry), from the 26th March next.

The Specification and Form of Tender may be obtained of the Surveyor to the Vestry, Mr. J. T. Pilditch, at his office, Municipal Buildings, Lavender Hill, between the hours of 10 a.m. and 4 p.m. (Saturdays between 10 a.m. and 1 p.m.), and no Tender will be considered unless the same be made upon the Official Form.

Tenders sealed and marked on the outside "Tender for Disinfectants," must be delivered here at the Municipal Buildings, on or before Saturday, the 16th February, proximo, and must contain the names and addresses of two responsible persons who are willing to join the Contractor in a contract for the due execution of the same.

The Contract will be prepared by, and at the expense of, the Vestry.

Persons tendering will be required to declare in their Tender that they pay the Trades-Union rate of Wages.

The Vestry do not bind themselves to accept the lowest or any Tender.

By order of the Vestry of the Parish of St. Mary, Battersea.

W. MARCUS WILKINS,
Vestry Clerk.

Municipal Buildings, Lavender Hill,
London, S.W.,
30th January, 1895.

Miscellaneous.

WANTED, a SITUATION as FOREMAN, by a Phosphorus Manufacturer; willing to put down a Plant and manage the same.—Address, "Phosphorus," *Chemical Trade Journal* Office, Manchester.

TO BE SOLD AS A GOING CONCERN (or would take in a partner with capital) an old established Drysaltery and Chemical Manufacturing Business, about 16 miles from Manchester; present owner has been in the business 50 years and is wishful to retire; a good opportunity for young chemist with capital.—Apply, "Drysalter," *Chemical Trade Journal* Office, Manchester.

ON SALE.—Small compact WORKS, in Widnes, in good order and condition, comprising Sheds, Wood and Stone-Tanks, Furnace, Steam Boiler, Crane and Siding.—Apply, 22, Sutton-road, St. Helens.

CHEMIST'S BUSINESS (Analytical and Teaching) FOR SALE. Fully-equipped Laboratory. 10, Moss-street, Paisley. Belonging to estate of the late Charles Manners, junr., F.I.C., Gas Analyst for Paisley, and Teacher Government Chemistry Classes.—Lodge offers, before 9th February, with James Paton, junr., 92, High-street, Paisley. Keys of Laboratory there.

AN experienced TECHNICAL CHEMIST is open to further ENGAGEMENTS.—Address, J. Ruffe, Neath, South Wales.

PRACTICAL VARNISH MAKER requires SITUATION as MANAGER. Over 20 years' experience in making all first-class Oil and Spirit Varnishes, Stains, Blacks, Compositions, etc. Eleven and a-half years late Maker and Manager of Varnish Department for Messrs. Goodlass, Wall and Co., Liverpool.—Address, J. E. Gould, 27, Holland-street, Fairfield, Liverpool.

WANTED. SITUATION as CHEMICAL PLUMBER and LEAD BURNER. Good references given.—Address: "Plumber," *Chemical Trade Journal*

CORRESPONDENCE SOLICITED.

Miscellaneous.—Cont.

SILICA WASTE, WANTED;
Must be white and dry.—Price per ton, samples, and particulars to "Silicum," *Chemical Trade Journal* Office, Manchester.

STANNATE OF SODA FOR SALE.—Small Lot of above; will take 42/- per cwt. to clear out.—Address, "Stannate," *Chemical Trade Journal* Office, Manchester.

NEW Inventions and Specialities in
Oils, Greases, Soaps, Paints, Varnishes, Enamels, Blackings, Blues, Polishes, etc., etc., practical working recipes with latest improved English, Continental, and American methods, Prize and Gold Medal Brands, cheapened substitutes, etc. Any samples matched; full lists sent.—Address, Lewis Jameson, 47, College-street, Islington, London, N.

NO Laboratory complete without
NELSON'S PATENT AUTOMATIC BLAST FURNACES. For bench or floor. No blower, no pump, no dust, no smoke, no dirt, no trouble. The most powerful, most compact, most economical Portable Furnaces in existence. Invaluable for Analysis, Metallurgy, &c. &c. Illustrated particulars, stamp.—NELSON & SONS, Shirland Works, Twickenham, London, S.W.

OLIVOLINE and ATEROLINE.
Two perfect non-gumming Lubricating Oils. 20 years in use. Made to suit every class of machinery ashore or afloat. Gentlemen who can influence business are offered liberal terms. Sole Makers, DUNCAN, WATSON & Co., Oil Manufacturers and Mill Furnishers, Dashwood House, New Broad-street, London, E.C.

FILTER PRESS FOR SALE:
12 27in. diam. plates; Johnson's make; good order; very cheap.—R. W. Andrews, 24, Grays Inn Road, London, W.C.

TO BE SOLD, the LANCASHIRE MANURE COMPANY'S WORKS at Widnes with Machinery and 24,420 square yards of Freehold Land.—Address J. Hosking, 16, Fenwick Street, Liverpool.

SULPHATE of Lime, calcined, For Sale, cheap, in large and regular quantities.—Address Sadler & Co., Limited, Middlesbrough.

AMMONIA, all qualities and strengths. Enquiries solicited. BROTHERTON & Co., Birmingham, Leeds, and Wakefield.



FOR
BONES,
BARYTES,
CHALK,
SULPHUR,
BARK,
LOGWOOD,
LOCUST BEANS,
&c.

PHOSPHATES,
BARYTES, SLAG,
CHEMICAL MANURES,
SODA ASH,
ALKALI,
ANTHRACENE,
WHITE LEAD,
PAINTS,
ORES, and COAL.



Factories and Works equipped with complete Automatic Systems.

Please write for Prices to

THE NEW CONVEYOR CO., Ltd.,
3 & 4, Lime Street Square,
LONDON, E.C.

CHEMICALS, ETC.

REVISED AND REDUCED PRICE LIST OF CHEMICALS.—Reagents, Standard Solutions, Indicators, etc. POST FREE UPON APPLICATION.

Illustrated Catalogue of BACTERIOLOGICAL APPARATUS Post Free upon Application

PHILIP HARRIS & CO., Ltd., 144 & 146, Edmund Street, BIRMINGHAM

Contractors to the Admiralty, Indian, Canadian, Tasmanian Governments, etc., etc.

STONEWARE ACID PANS, COCKS, RECEIVERS, & JAS. STIFF & SONS,

LAMBETH, LONDON, S.E.,

MANUFACTURE EVERY KIND OF VITRIFIED STONEWARE CHEMICAL APPARATUS,
INSULATORS, BATTERY JARS, POROUS CELLS, BOTTLES, JARS, CONDENSING WORMS, PLUMBAGO & FIRE-CLAY CRUCIBLES.

PURE SULPHUROUS ACID, SULPHITES AND BISULPHITES OF LIME, SODA, FOR EXPORT.

S. KEYS & CO. Limited, WEST BROMWICH

HAEUSLER'S PATENT VULCANITE CEMENT ROOFING

IS THE BEST POSSIBLE FLAT-ROOFING.

Adopted with uniform success in all Continental Countries.

It ensures dry and healthy top-rooms with an equal temperature, and is specially adapted for Factories, Warehouses, Offices, Barracks, Schools, Shops, etc. Absolutely watertight, snow and fireproof. Never requires repairing, and can be used in any climate for all purposes.—Agents Wanted Everywhere.

Contracts entered into for the complete Construction of Roofs.

Full Particulars and Estimates Free on application.—AGENTS WANTED.

C. F. BEER, SONS, COLOGNE (Rhine).

In Manchester, a Vulcanite Cement Roofing is on the new Offices and Chemical Laboratory of Messrs. Spence & Sons, Manchester Alum Works.

TUBES

IRON and STEEL (butt or lap welded), and FITTINGS for Gas, Water, Steam, Liquid Ammonia, and Hydraulic Work, galvanized white enamelled inside, or coated by Dr. Angus Smith's Composition. In stock to 3in. diameter. **COILS** for heating, super-heating, distilling and refrigerating purposes, to 500 feet long without joints.

JOHN SPENCER,
Globe Tube Works, Wednesbury, and 14, Great St. Thomas Apostle, Cannon-st., London, E.C.

BRYAN CORCORAN MILLSTONE BUILD



WIRE WEAVER MACHINE MANUFACTURER AND GENERAL MILL FURNISHER. Sole Maker of MILBURN Patent Consolidated Stone Grinding. Especially suitable for all materials. Wet or Dry. Works and Warehouse: Back Church Lane. Parcel Dept.: Basement Corn Exchange.

31, MARK LANE, LONDON

CANNINGTON, SHAW & CO., LIMITED,

CARBOYS.

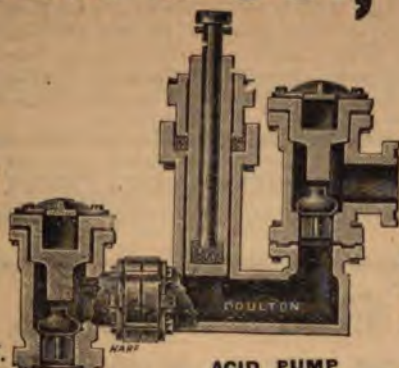
SHERDLEY GLASSWORKS, ST. HELENS.

Liverpool: Exchange Chambers. Glasgow: West Campbell-st.

OULTON & CO.,

LAMBETH,
LONDON, S.E.

MANUFACTURERS OF
STONEWARE
CHEMICAL
APPARATUS
OF
EVERY DESCRIPTION.
PRICE LISTS
ON APPLICATION.



IMPROVED
STONEWARE
ACID PUMPS.

Each Pump prior to
leaving the Factory
is put into actual
work and tested.

SHOWROOMS: 17, Deansgate, Manchester; 100, Soho St., Liverpool;
Granville St., Birmingham; 6, Rue de Paradis, Paris.

SPENCE'S LUMP ALUM

(POTASH or AMMONIA).

The Leading Make for nearly Half a Century.

Also PURE SULPHATE OF ALUMINA and ALUMINO-FERRIC.

ENTER SPENCE & SONS, Manchester Alum Works, MANCHESTER.

BLAYDON MANURE AND ALKALI COMP.'S
PURE WHITE SULPHATE OF ALUMINA,
BLANC FIXE, CHLORIDE, NITRATE,
AND SULPHIDE OF BARIUM.

UNITED ALKALI COMP.'S

HYPO-SULPHITE OF SODA,

WALTHER FELD & CO.'S

PURE PRECIP. CARBONATE OF BARYTES 96/98%

Hydrate and Anhydrous Alumina, Chloride and Carbonate of
Alumina, Aluminate of Soda, Hydrate of Barium, &c.

Agents: JULIUS HULSEN & CO., NEWCASTLE-ON-TYNE.

OVER 25,000 ARE WORKING.



FOR BURNERS. | BOILING NOZZLES. | SILENT HEATERS. | VACUUM EJECTORS. | AIR, &c. EXHAUSTERS.

R. BURN & HALL, Chief Office, 63, Royal Exchange, MANCHESTER.

Tenders.

THE VESTRY OF THE PARISH OF ST.
MARY, BATTERSEA.

THE Vestry of the Parish of St.
Mary, Battersea, are prepared to RECEIVE
TENDERS for the SUPPLY OF DISINFECTANTS
for One, Two, or Three Years (at the option of the Vestry),
from the 26th March next.

The Specification and Form of Tender may be obtained
of the Surveyor to the Vestry, Mr. J. T. Fildith, at his
office, Municipal Buildings, Lavender Hill between the
hours of 10 a.m. and 4 p.m. (Saturdays between 10 a.m.
and 1 p.m.), and no Tender will be considered unless the
same be made upon the Official Form.

Tenders sealed, and marked on the outside "Tender
for Disinfectants," must be delivered here at the Municipal
Buildings, on or before Saturday, the 16th February,
proximo, and must contain the names and addresses of
two responsible persons who are willing to join the Con-
tractor in a contract for the due execution of the same.

The Contract will be prepared by, and at the expense of,
the Vestry.

Persons tendering will be required to declare in their
Tender that they pay the Trades-Union rate of Wages.

The Vestry do not bind themselves to accept the lowest
or any Tender.

By order of the Vestry of the Parish of St. Mary,
Battersea

W. MARCUS WILKINS,
Vestry Clerk.

Municipal Buildings, Lavender Hill,
London, S.W.,
30th January, 1895.

Miscellaneous.

PRACTICAL VARNISH MAKER

requires SITUATION as MANAGER. Over 20
years' experience in making all first-class Oil and Spirit
Varnishes, Stains, Blacks, Compositions, etc. Eleven and
a-half years late Maker and Manager of Varnish Depart-
ment for Messrs. Goodlass, Wall and Co., Liverpool.—
Address J. E. Gould, 27, Holland-street, Fairfield, Liver-
pool.

WANTED, a SITUATION as

FOREMAN, by a Phosphorus Manufacturer;
willing to put down a Plant and manage the same.—
Address, "Phosphorus," *Chemical Trade Journal*
Office, Manchester.

WANTED.—A reliable FORE-

MAN to take charge of Box-making Depart-
ment in large Works. State Wages; good references
required.—Address, "Box," *Chemical Trade Journal*
Office, Manchester.

F. C. S. (aged 24) desires APPOINT-

MENT in Manure Works, Chemical Works,
Analytical or Assayer's Laboratory. Excellent testi-
monials; moderate salary.—Address, R. H. W., *Chemical*
Trade Journal Office, Manchester.

AN Analytical CHEMIST, F.I.C.,

requires ENGAGEMENT either in Works or
Private Laboratory; having spent 3 years in a Scientific
Training College and 5 years in a Private Laboratory;
highest references.—Address, "Chemist," *Chemical Trade*
Journal Office, Manchester.

TO BE SOLD AS A GOING

CONCERN (or would take in a partner with
capital) an old established Drysaltery and Chemical
Manufacturing Business, about 16 miles from Man-
chester; present owner has been in the business 50 years
and is wishful to retire; a good opportunity for young
chemist with capital.—Apply, "Drysalter," *Chemical*
Trade Journal Office, Manchester.

ON SALE.—Small compact

WORKS, in Widnes, in good order and condition,
comprising Sheds, Wood and Stone-Tanks, Furnace,
Steam Boiler, Crane and Siding.—Apply, 22, Sutton-
road, St. Helens.

WANTED, Quotations for Acetate

of Soda, Brown and White Sugar of Lead, Red
and Yellow Prussiate of Potash, Zinc Oxide and Zinc
Dust, Dextrine, Farina, Chlorates of Potash and Soda, in
large quantities.—Particulars to "Prussiate," *Chemical*
Trade Journal Office, Manchester.

FOR SALE, 100 tons of Cylinder

SALT CAKE and 100 tons of NITRE CAKE;
delivered Macclesfield Station.—Edward Eaton, Fountain-
street East, Macclesfield.

AIR or Gas Compressing Engine,

nearly new; Steam Cylinder, 14 in.; Water-
Jacketed Air-Cylinder, 18 in.; For Sale, cheap.—Apply,
John Hargreaves, Widnes.

Miscellaneous.—Cont.

WATER-POWER: fully developed for Electrolytic and other Manufacturing Processes; available to the extent of many thousand Horse Power, at 10s. per H.P. per annum; near to railway and shipping part.—Address, "Power," care of Messrs. Deacon and Co., 154, Leadenhall-street, London, E.C.

TO Gas Managers and Chemical Manufacturers, &c.—For Sale: Two good Second-hand Solid Plate LEAD SATURATORS; also a 10-ton STILL and HEATER, &c.—For particulars and to treat, apply to Messrs. J. Taylor and Co., Central Plumbing Works, Bolton.

NEW Inventions and Specialities in Oils, Greases, Soaps, Paints, Varnishes, Enamels, Blackings, Blues, Polishes, etc., etc., practical working recipes with latest improved English, Continental, and American methods, Prize and Gold Medal Brands, cheapened substitutes, etc. Any samples matched; full lists sent.—Address, Lewis Jameson, 47, College-street, Islington, London, N.

NO Laboratory complete without NELSON'S PATENT AUTOMATIC BLAST FURNACES. For bench or floor. No blower, no pump, no dust, no smoke, no dirt, no trouble. The most powerful, most compact, most economical Portable Furnaces in existence. Invaluable for Analysis, Metallurgy, &c. &c. Illustrated particulars, stamp.—NELSON & SONS, Shirland Works, Twickenham, London, S.W.

OLIVOLINE and ATEROLINE. Two perfect non-gumming Lubricating Oils. 20 years in use. Made to suit every class of machinery ashore or afloat. Gentlemen who can influence business are offered liberal terms. Sole Makers, DUNCAN, WATSON & Co., Oil Manufacturers and Mill Furnishers, Dashwood House, New Broad-street, London, E.C.

DISINTEGRATORS.—A New Machine for £12, second to none, with 18 inch grinding chamber. Also Mortar Mill, 5ft. 6in. pan; for £24. A 10 x 6 New Stone Breaker, for £28; larger sizes in proportion, or can be had on hire, with option of purchase.—Mason Bros., late S. Mason and Co., Stone Breaking and Grinding Machine Makers, Brandon-street, Leicester.

FILTER PRESS FOR SALE: 12 3/4 in. diam. plates; Johnson's make; good order; very cheap.—R. W. Andrews, 24, Grays Inn Road, London, W.C.

TO BE SOLD, the LANCASHIRE MANURE COMPANY'S WORKS at Widnes with Machinery and 24,420 square yards of Freehold Land.—Address J. Hosking, 16, Fenwick Street, Liverpool.

SULPHATE of Lime, calcined, For Sale, cheap, in large and regular quantities.—Address Sadler & Co., Limited, Middlesbrough.

AMMONIA, all qualities and strengths. Enquiries solicited. BROTHERTON & Co., Birmingham, Leeds, and Wakefield.

FULLER'S BONE STEAMER.

Softens the Bones without extracting any of the Nitrogenous Substance.



Extraction of the Grease within an hour.

ESTIMATES FOR COMPLETE BONE STEAMING AND GRINDING PLANT. GRINDING MACHINERY FOR EVERY DESCRIPTION OF MATERIAL.

W. M. FULLER, Jun., 48, Great Charles Street, Birmingham.

HAEUSLER'S PATENT VULCANITE CEMENT ROOF

IS THE BEST POSSIBLE FLAT-ROOFING.

Adopted with uniform success in all Continental Countries.

It ensures dry and healthy top-rooms with an equal temperature, and is adapted for Factories, Warehouses, Offices, Barracks, Schools, Shops, etc. Abundantly watertight, snow and fireproof. Never requires repairing, and can be used in all climates for all purposes.—Agents Wanted Everywhere.

Contracts entered into for the complete Construction of Roofs.

Full Particulars and Estimates Free on application.—AGENTS WANTED.

C. F. BEER, SONS, COLOGNE (Rhine).

In Manchester, a Vulcanite Cement Roofing is on the new Offices and Chemical Laboratory of Messrs. Spence & Sons, Manchester Alum Works.

CHEMICALS, ETC.

REVISED AND REDUCED PRICE LIST OF CHEMICALS.—Reagents, Solutions, Indicators, etc. POST FREE UPON APPLICATION.

Illustrated Catalogue of BACTERIOLOGICAL APPARATUS

Post Free upon Application

PHILIP HARRIS & CO., Ltd., 144 & 146, Edmund Street, BIRMINGHAM.

Contractors to the Admiralty, Indian, Canadian, Tasmanian Governments, etc., etc.

PURE SULPHUROUS ACID
SULPHITES AND BISULPHITES OF LIME, SODA,
FOR EXPORT.

S. KEYS & CO. Limited, WEST BROMWICH.

STONEWARE ACID PANS, COCKS, RECEIVERS,
JAS. STIFF & SONS,
LAMBETH, LONDON, S.E.,
MANUFACTURE EVERY KIND OF VITRIFIED STONEWARE
CHEMICAL APPARATUS,
INSULATORS, BATTERY JARS, POROUS CELLS, BOTTLES, JARS,
CONDENSING WORMS, PLUMBAGO & FIRE-CLAY CRUCIBLES.

TUBES

IRON and STEEL (butt or lap welded), and FITTINGS for Gas, Water, Steam, Liquid Ammonia, and Hydraulic Work, galvanized white enamelled inside, or coated by Dr. Angus Smith's Composition. In stock to 36 in. diameter. COILS for heating, super-heating, distilling and refrigerating purposes, to 500 feet long without joints.

JOHN SPENCER,

Globe Tube Works, Wednesbury, and 14, Great St. Thomas Apostle, Cannon-st., London, E.C.

BRYAN CORCORAN

MILLSTONE BUILDING
WIRE WEAVER, MACHINE MAKER
AND GENERAL MILL FURNISHING
Sole Maker of MILLSTONE
Patent Conoidal Stone Crushers
Especially suitable for
materials, Wet or Dry
Works and Warehouses
Back Church Lane. Parcel Dept.: Basins
Corn Exchange.
31, MARK LANE, LONDON.

CANNINGTON, SHAW & CO., LIMITED.

CARBOYS.

SHERDLEY GLASSWORKS, ST. HELENS.

Liverpool: Exchange Chambers.
Glasgow: West Campbell-st.

WALKER BROS

ENGINEERS, PAGEFIELD IRONWORKS, WIGAN.

WALKERS' PATENT
AIR COMPRESSING ENGINES.
GAS COMPRESSING ENGINES.
150,000 I.H.P. ALREADY AT WORK

WALKERS' PATENT
EXHAUST AND BLAST FANS.

RIVER POLLUTION

DYERS, CALICO PRINTERS, AND OTHERS
readily PURIFY THEIR WASTE WATERS by the simple and inexpensive
ALUMINO-FERRIC PROCESS.

Full Particulars on application to—

ER SPENCE & SONS, Manchester Alum Works, MANCHESTER.

R. W. GREEFF & CO.,

EASTCHEAP, LONDON, E.C.

IMPORTERS OF

ACETONE. ACETIC ACID & SALTS. ALUMINA
SALTS. ANTIMONY SALTS. BARIUM SALTS.
GERMINE. LEAD COMPOUNDS. LIME SALTS.
LITHOPONE. OXALIC ACID & SALTS.
POTASH SALTS. SALICYLIC ACID & SALTS.
SODA SALTS. TIN COMPOUNDS. ZINC COMPOUNDS.

SPECIALITIES:

TARTARIC ACID, TARTAR EMETIC, FLUOR/CHROME.

SPECIALITIES:—

ASH 58%	Phosphoric Acid	Castor Oil	Amidol, Metol, Glycin,
TASHES	Acetates	Olive Oil	Thiocarbamid and other
LTCAKE	Oxalic Acid	Essent. Oils	Photographicals,
ACH	Tartaric Acid	Glucose	Lumieres,
IA SALTS	Salicylic Acid	Grape Sugar	Dry Plates,
RAX	Carbolic Acid	Treacle	&c., &c.
RCURIALS	Camphor	Nitrate of Silver	
UBBIATES	Stearine	(Pure)	
ANIDES	Glycerine		
TALS	OLEINE		
NERALS			
IMSTONE			
APHUR			

IMPORTERS—Commission Merchants—EXPORTERS.
FUERST BROS.
HEADQUARTERS
FOR ALL
HEAVY OR FINE
CHEMICALS,
Pharmaceutical Products,
Photographic Developers,
Drysaltaries and Drugs,
Also OILS and PRODUCE.
LONDON: 17, Philpot Lane, E.C. and 2 & 4, Stone Street, NEW YORK.
SAMPLER AND PRICES ON APPLICATION.

Tenders.

MANCHESTER CORPORATION GAS WORKS.
TO TAR DISTILLERS AND OTHERS.

THE Gas Committee of the Corporation of Manchester are prepared to receive TENDERS for the PURCHASE and REMOVAL of the GAS TAR to be produced at their several stations during a period of One, Two, or Three Years, commencing as follows, viz:—

Bradford-road Station, from noon on the 31st March, 1895.

Rochdale-road Station, from noon on the 24th June, 1895.

Gaythorn Station, from noon on the 1st August, 1895.

The Committee do not bind themselves to accept the highest or any Tender, and reserve the right to divide the Tenders as they may consider advisable.

Sealed Tenders addressed to the Chairman of the Gas Committee, and endorsed "Tender for Tar," must be delivered at the offices of the Gas Department, Town Hall, on or before Thursday the 21st of March next.

Forms of Tender and other particulars may be obtained on application in writing to Mr. Charles Nickson, Superintendent of the department.

By order of the Gas Committee.

WM. HENRY TALBOT,

Town Clerk.

Town Hall, Manchester,
15th February, 1895

Miscellaneous.

Replies to Advertisements addressed to the "Chemical Trade Journal" Office are forwarded to Advertisers, post free.

POSITION WANTED, by a young beginner, German Chemist, Dr. Phil.; has studied at Technical High School and University, desires Appointment in Works or Laboratory; highest testimonials and recommendations, good linguist.—Address, C. M., Chemical Trade Journal Office, Manchester.

PRACTICAL VARNISH MAKER

requires SITUATION as MANAGER. Over 20 years' experience in making all first-class Oil and Spirit Varnishes, Stains, Blacks, Compositions, etc. Eleven and a-half years late Maker and Manager of Varnish Department for Messrs. Geoilass, Wall and Co., Liverpool.—Address J. E. Gould, 27, Holland-street, Fairfield, Liverpool.

WANTED, a SITUATION as FOREMAN, by a Phosphorus Manufacturer; willing to put down a Plant and manage the same.—Address, "Phosphorus," Chemical Trade Journal Office, Manchester.

PUPIL.—A well known Mechanical

Engineer, member of the Birmingham City Council, has a VACANCY in his offices. Subjects: high-class specialities of an advanced type. Residence with principal also if desired.—Address, "Aeronautics," Chemical Trade Journal Office, Manchester.

FOR SALE.—Carbonic Acid Trade.

One Set of COMPRESSORS, quite new, for dealing with two tons of Liquid Gas per 24 hours. This machine is fitted with 20 h.p. Vertical Compound Engine, the whole being mounted on one bed-plate, self-contained.—Address, Howard Lane, Engineer, Birmingham.

FOR SALE.—One GAS COM-

PRESSOR, complete with engine, self-contained, on one bed-plate. This machine is quite new, and capable of compressing 700 cubic feet per hour of oxygen, hydrogen, air, carbonic acid or other gases to a pressure of 3,000 lb. per sq. in.—Address, Howard Lane, Engineer, Birmingham.

FOR SALE.—One new Vertical

COMPOUND STEAM ENGINE, of 20 h.p., with variable expansion gear and "Pickering" governor, high-pressure cylinder 9½ in. diameter, low-pressure 15 in. diameter, stroke 15 in., suitable for 120 to 150 lb. pressure.—Address, Howard Lane, Engineer, Birmingham.

FOR SALE.—GLOBE PULVER-

ISING MILL, very little used. This mill is guaranteed to reduce 30 cwt. per hour, to a fineness leaving 15 per cent. residue on a 100 mesh; price moderate.—Taylor, Monkmoor Gardens, Shrewsbury.

FOR SALE.—SECOND-HAND

SULPHATE AMMONIA PLANT (Dr. Feldmann's), comprising Stills, Superheater, Solid Lead Saturator, 4 large Acid Tanks, etc. Offers invited. Can be seen and further particulars obtained upon application to J. E. Lamb, Gas Works, Albinham.

CORRESPONDENCE SOLICITED.

Miscellaneous.—Cont.

FOR SALE.—BLOWING - EN-
 GINE (by Scott & Co.), in good condition, capable
 of delivering 20,000 cubic ft. per hour against one atmo-
 sphere; cylinder, 18 in.; steam ditto, 14 in.; stroke,
 12 in.; valve gear; price £80 in store London.
 —Apply. Blow, Chemical Trade Journal Office

EDGE RUNNER GRINDING
 MILL, REQUIRED; in good condition, 5 feet to
 6 feet in diameter. Send particulars and lowest prices,
 London, to W. J. Fraser and Co., 98, Com-
 mercial-road East, London, E.

NEW Inventions and Specialities in
 OIL, Greases, Soaps, Paints, Varnishes, Enamels,
 Blackings, Blues, Polishes, etc., etc., practical working
 recipes with latest improved English, Continental, and
 American methods, Prize and Gold Medal Brands,
 cheapened substitutes, etc. Any samples matched; full
 lists sent.—Address, Lewis Jameson, 47, College-street
 Islington, London, N.

NO Laboratory complete without
 NELSON'S PATENT AUTOMATIC BLAST
 FURNACES. For bench or floor. No blower, no pump,
 no dust, no smoke, no dirt, no trouble. The most powerful,
 most compact, most economical Portable Furnaces in
 existence. Invaluable for Analysis, Metallurgy, &c. &c.
 Illustrated particulars, stamp.—NELSON & SONS,
 Shirland Works, Twickenham, London, S.W.

OLIVOLINE and ATEROLINE.
 Two perfect non-gumming Lubricating Oils. 20
 years in use. Made to suit every class of machinery
 ashore or afloat. Gentlemen who can influence business
 are offered liberal terms. Sole Makers, DUNCAN, WATSON
 & CO., Oil Manufacturers and Mill Furnishers, Dashwood
 House, New Broad-street, London, E.C.

TO BE SOLD, the LANCASHIRE
 MANURE COMPANY'S WORKS at Widnes
 with Machinery and 14,400 square yards of Freehold Land.—
 Address J. Hosking, 18, Fenwick Street, Liverpool.

SULPHATE of Lime, calcined, For
 Sale, cheap, in large and regular quantities.—
 Address Saffier & Co., Limited, Middlesbrough.

AMMONIA, all qualities and
 strengths. Enquiries solicited.
 BROOKERTON & Co., Birmingham, Leeds, and Wakefield.

ARGON.

A NUMBER of PFLUCKER'S
 VACUUM TUBES, price 7s. 6d. each post free,
 containing PURE ARGON, are to be had from C. E.
 Muller and Co., 148, High Holborn, London, W.C.

HARPER'S LIST

OF ACCESSORIES for the TRANSMISSION of
 POWER, etc.:—BELT PULLEYS, ROPE PULLEYS,
 GEAR WHEELS, SHAFTING, COUPLINGS,
 PROTESTALS, FIXINGS; appears on Pages 14 and
 15 of the best Chemical Trade Journal of each month.

J. S. MERRY & CO.,
 ANALYTICAL CHEMISTS
SWANSEA.

Weighing and Sampling of Minerals, Metals, and
 Metal Products superintended.

SULPHURIC ACID.

JOHN NICHOLSON & SONS,
 Chemical Works, LERDS, specially produce this
 ACID from BRINSTONE, for making SULPHATE
 OF AMMONIA of high quality and good colour. Delivery
 in our own Railway Tank Wagon or Carboys. Highest
 references and all particulars supplied on application.

Inlove, Alliot & Co. Ltd.,
 ENGINEERS,
NOTTINGHAM.

Advertisement in first issue of
 this month.

CHEMICALS, ETC.

REVISED AND REDUCED PRICE LIST OF CHEMICALS.—Reagents, Sta-
Solutions, Indicators, etc. POST FREE UPON APPLICATION.

Illustrated Catalogue of BACTERIOLOGICAL APPARATUS

Post Free upon App

PHILIP HARRIS & CO., Ltd., 144 & 146, Edmund Street, BIRMINGHAM
 Contractors to the Admiralty, Indian, Canadian, Tasmanian Governments, etc., etc.

STONEWARE ACID PANS, COCKS, RECEIVERS, &
JAS. STIFF & SONS,
 LAMBETH, LONDON, S.E.,

MANUFACTURE EVERY KIND OF VITRIFIED STONEWARE
CHEMICAL APPARATUS,
 INSULATORS, BATTERY JARS, POROUS CELLS, BOTTLES, JARS,
 CONDENSING WORMS, PLUMBAGO & FIRE-CLAY CRUCIBLES.

PURE SULPHUROUS ACID,
SULPHITES AND BISULPHITES OF LIME, SODA,
FOR EXPORT.

S. KEYS & CO. Limited, WEST BROMWICH

HAEUSLER'S PATENT VULCANITE CEMENT ROOFING

IS THE BEST POSSIBLE FLAT-ROOFING.

Adopted with uniform success in all Continental Countries.

It ensures dry and healthy top-rooms with an equal temperature, and is ap-
 propriate for Factories, Warehouses, Offices, Barracks, Schools, Shops, etc. Abs-
 olutely watertight, snow and fireproof. Never requires repainting, and can be used in
 climate for all purposes.—Agents Wanted Everywhere.

Contracts entered into for the complete Construction of Roofs.

Full Particulars and Estimates Free on application.—AGENTS WANTED.

C. F. BEER, SONS, COLOGNE (Rhine).

In Manchester, a Vulcanite Cement Roofing is on the new Offices and Chemical Laboratory of Messrs.
 Spence & Sons, Manchester Alum Works.

TUBES

IRON and STEEL (butt or lap welded),
 and **FITTINGS** for Gas, Water, Steam, Liquid
 Ammonia, and Hydraulic Work,
 galvanised white enamelled inside, or coated by Dr. Angus
 Smith's Composition. In stock to 8 in. diameter.

COILS for heating, super-heating, distilling and
 refrigerating purposes, 10 to 500 feet long without joints.

JOHN SPENCER,

Globe Tube Works, Wednesbury, and 14, Great St.
 Thomas Apostle, Cannon-st., London, E.C.

BRYAN CORCORAN
MILLSTONE BUILDING

WIRE WEAVER, MACHINE MAKER
AND GENERAL MILL FURNISHER
 Sole Maker of **MILNERS**
 Patent Conoidal Stone Grinders
 Especially suitable for a
 materials, West of D.
 Works and Warehouse
 Back Church Lane, Faversham Dept.: Bakers
 Corn Exchange.

31, MARK LANE, LONDON

CANNINGTON, SHAW & CO., LIMITED,

CARBOYS.

SHEROLEY GLASSWORKS, ST. HELENS

WALKER BROS., ENGINEERS, PAGEFIELD IRONWORKS, WIGAN.

WALKERS' PATENT
AIR COMPRESSING ENGINES.
GAS COMPRESSING ENGINES.
150,000 I.H.P. ALREADY AT WORK.

WALKERS' PATENT
EXHAUST AND BLAST FANS.

RIVER POLLUTION

DYERS, CALICO PRINTERS, AND OTHERS
readily PURIFY THEIR WASTE WATERS by the simple and inexpensive
ALUMINOFERRIC PROCESS.

Full Particulars on application to—
TER SPENCE & SONS, Manchester Alum Works, MANCHESTER.

R. W. GREEFF & CO., EASTCHEAP, LONDON, E.C.

IMPORTERS OF
ACETONE. ACETIC ACID & SALTS. ALUMINA
SALTS. ANTIMONY SALTS. BARIUM SALTS.
GLYCERINE. LEAD COMPOUNDS. LIME SALTS.
LITHOPONE. OXALIC ACID & SALTS.
POTASH SALTS. SALICYLIC ACID & SALTS.
SODA SALTS. TIN COMPOUNDS. ZINC COMPOUNDS.
SPECIALITIES:
TARTARIC ACID, TARTAR EMETIC, FLUOR/CHROME.

SPECIALITIES—

BA ASH 58%	Phosphoric Acid	Castor Oil	Amidol, Metol, Glycin,
ASHES	Acetates	Olive Oil	Thiocarbamid and other
BLTCAKE	Oxalic Acid	Essent. Oils	Photographicals,
LEACH	Tartaric Acid	Glucose	Lumieres,
THIA SALTS	Salicylic Acid	Grape Sugar	Dry Plates,
BRAX	Carbolic Acid	Cane Syrup	&c., &c.
MERCURIALS	Camphor	Treacle	
IL. COPPER	Stearine	Nitrate of Silver	
RUSSIATES	Glycerine	(Pure)	
AMIDES	OLEINE		
ETALS			
MINERALS			
CRIMSTONE			
PULPHUR			

IMPORTERS—Commission Merchants—EXPORTERS.
FUERST BROS.
HEADQUARTERS
FOR ALL
HEAVY OR FINE
CHEMICALS,
Pharmaceutical Products,
Photographic Developers,
Drysalteries and Drugs,
Also OILS and PRODUCE.
LONDON: 17, Philpot Lane, E.C. and 2 & 4, Stone Street, NEW YORK.
SAMPLER AND PRICES ON APPLICATION.

Tenders.

BRIGHOUSE CORPORATION.

TO MANUFACTURING CHEMISTS & OTHERS.

THE Gas Committee of the Brig-
house Corporation are prepared to receive Tenders
for the Purchase of the SURPLUS TAR produced at their
Gas Works, for a term of One, Two or Three Years from
the 25th of March instant.

The quantity of Tar made is about 350 Tons per annum,
and there is storage capacity on the works for about 250
tons. The Tar can be loaded into Contractors' carts on
the works, or into Barges on the Calder and Hebble Canal
(which runs alongside) by pipe direct from the works.

Any further particulars can be obtained on application to
the Gas Engineer.

Sealed Tenders, endorsed on the outside "Tender or
Tar," stating price per ton at the Gas Works, must be sent
in on or before Wednesday, the 27th day of March, 1895,
addressed to the Town Clerk, Public Offices, Brighouse.

The Committee do not bind themselves to accept the
highest or any Tender.

By order,
JAMES PARKINSON,
Town Clerk.

Town Clerk's Office, Brighouse,
March 12th, 1895.

Miscellaneous.

POSITION WANTED, by a young
beginner, German Chemist, Dr. Phil.; has studied
at Technical High School and University, desires
Appointment in Works or Laboratory; highest testi-
monials and recommendations, good linguist.—Address
C. M., Chemical Trade Journal Office, Manchester.

WANTED, a SITUATION as
FOREMAN, by a Phosphorus Manufacturer;
willing to put down a Plant and manage the same.—
Address, "Phosphorus," Chemical Trade Journal
Office, Manchester.

PUPIL.—A well known Mechanical
Engineer, member of the Birmingham City Council,
has a VACANCY in his offices. Subjects: high-class
specialities of an advanced type. Residence with principal
also if desired.—Address, "Aeronautics," Chemical Trade
Journal Office, Manchester.

MANUFACTURING Chemist,
Well up in Assaying, &c., desires POST as
MANAGER OF WORKS; 14 years' experience as
Superintendent.—Replies to "Metal," c/o Oldfield,
Pattinson and Co., Manchester.

FOR SALE, or would take Partner,
SMALL WORKS few miles from Manchester.
Suitable for Soda Crystals, Epsoms, Glaubers, or any
kindred line.—Address, W., Chemical Trade Journal
Office, Manchester.

MAKERS of GREEN COPPERAS
please communicate with "Copperas," Chemical
Trade Journal Office, Manchester.

FOR SALE—Carbonic Acid Trade.
One Set of COMPRESSORS, quite new, for
dealing with two tons of Liquid Gas per 24 hours. This
machine is fitted with 20 h.p. Vertical Compound Engine,
the whole being mounted on one bed-plate, self-contained
—Address, Howard Lane, Engineer, Birmingham.

FOR SALE.—One GAS COM-
PRESSOR, complete with engine, self-contained,
on one bed-plate. This machine is quite new, and capable
of compressing 300 cubic feet per hour of oxygen, hydrogen,
air, carbonic acid, or other gases to a pressure of 3,000 lb.
per sq. in.—Address, Howard Lane, Engineer, Birming-
ham.

FOR SALE.—One new Vertical
COMPOUND STEAM ENGINE, of 20 h.p.,
with variable expansion gear and "Pickering" governor,
high-pressure cylinder 9½ in. diameter, low-pressure 15 in.
diameter, stroke 15 in., suitable for 120 to 150 lb. pressure.
—Address, Howard Lane, Engineer, Birmingham.

FOR SALE.—BLOWING - EN-
GINE (by Scott & Co.), in good condition, capable
of delivering 20,000 cubic ft. per hour against one atmo-
sphere; air cylinder, 18 in.; steam ditto, 24 in.; stroke,
20 in.; variable expansion gear; price £80 in store London.
—Apply, "Blow," Chemical Trade Journal Office.

FOR Sale, one C.I. TANK (new),
8 ft. x 8 ft. x 2 ft. 6 in. Also Second-hand STEAM
PUMP, equal to new; will deliver 200 gallons per hour.—
Address, "Tank," Chemical Trade Journal Office, Man-
chester.

CORRESPONDENCE SOLICITED.

CHEMICALS, ETC.

VERIFIED AND VERIFIED PRICE LIST OF CHEMICALS.—Reagents, Standard Solutions, Indicators, &c. POST FREE UPON APPLICATION.

ANALYTICAL CHEMISTS AND INSTRUMENTAL APPLIANCES

Post Free upon Application

PHILIP HARRIS & CO., LTD., 144 & 145, Edmund Street, BIRMINGHAM

Suppliers to the Admiralty, India, Russia, Turkish Governments, etc., etc.

STONEWARE ACID PANS, COCKS, RECEIVERS, &c.

JAS. STIFF & SONS,

LAMBETH, LONDON, S.E.

MANUFACTURE EVERY KIND OF VITRIFIED STONEWARE

CHEMICAL APPARATUS,

IMMEDIATE, LATEST JARS, POROUS CELLS, BOTTLES, JARS, CONDENSING TUBES, FLUWAGE & FIRE-CLAY CRUCIBLES.

PURE SULPHUROUS ACID,

SULPHITES AND DISULPHITES OF LIME, SODA, &c.

FOR EXPORT.

S. HAYES & CO. Limited, WEST BROMWICH

KAUFMANN'S PATENT VULCANITE CEMENT ROOFING

IS THE BEST POSSIBLE FLAT-ROOFING.

Keeps out water, keeps in heat in all Continental Countries.

Keeps out water, keeps in heat in all Continental Countries. It is specially adapted for Factories, Workshops, Offices, Barracks, Schools, Shops, etc. Absolutely waterproof, does not decay. Never requires repainting, and can be used in every climate. It is all-weather-proof. Always ready everywhere.

Complete details for the complete construction of Roofs.

For particulars and samples free on application.—AGENTS WANTED.

G. F. BEER, SONS, COLOGNE (Rhine).

For particulars and samples free on application.—AGENTS WANTED. For particulars and samples free on application.—AGENTS WANTED. For particulars and samples free on application.—AGENTS WANTED.



Details and Works equipped with complete automatic system.
 NEW CONVEYOR CO., LTD.,
 4, Lime Street Square,
 LONDON, E.C.

TUBES

IRON and STEEL (hot or lat welded),
 GALVANIZED, and other special
 tubes for all purposes. Also
 machinery for making tubes,
 and all accessories.
 JOHN SPENCER,
 10, New Street, Birmingham, and 14, Great St.
 Street, London, E.C.

BRYAN CORCORAN

MILLSTONE BUILDER,
 WIRE WEAVER, MACHINE MANUFACTURER,
 AND GENERAL MILL FURNISHES.
 Sole Maker of MILBURN'S
 Patent Consolidated Stone Grinding Mill.
 Especially suitable for certain
 materials, Wet or Dry.
 Works and Warehouses:
 Back Church Lane. Parcel Dept.: Basement of 31
 Corn Exchange.
 31, MARK LANE, LONDON.

CANNINGTON, SHAW & CO., LIMITED,

CARBOYS.

SHERDLEY GLASSWORKS, ST. HELENS.

WALKER BROS., ENGINEERS, PAGEFIELD IRONWORKS, WIGAN.

WALKERS' PATENT
R COMPRESSING ENGINES.
S COMPRESSING ENGINES.
150,000 I.H.P. ALREADY AT WORK.

WALKERS' PATENT
HAUST AND BLAST FANS.

RIVER POLLUTION

DYERS, CALICO PRINTERS, AND OTHERS
daily PURIFY THEIR WASTE WATERS by the simple and inexpensive
ALUMINOFERRIC PROCESS.

Full Particulars on application to—

ER SPENCE & SONS, Manchester Alum Works, MANCHESTER.

R. W. GREEFF & CO., EASTCHEAP, LONDON, E.C.

IMPORTERS OF

ETONE. ACETIC ACID & SALTS. ALUMINA
SALTS. ANTIMONY SALTS. BARIUM SALTS.
GERINE. LEAD COMPOUNDS. LIME SALTS.
LITHOPONE. OXALIC ACID & SALTS.
OTASH SALTS. SALICYLIC ACID & SALTS.
A SALTS. TIN COMPOUNDS. ZINC COMPOUNDS.
SPECIALITIES
TARIC ACID, TARTAR EMETIC, FLUOR/CHROME.

SPECIALITIES—

ASH 58% Phosphoric Acid	Castor Oil	Amidol, Metol, Glycin,
ASHES Acetates	Olive Oil	Thiocarbamid and other
CAKE Oxalic Acid	Essent. Oils	Photographicals,
CH Tartaric Acid	Glucose	Lumieres,
ASALTS Salicylic Acid	Grape Sugar	Dry Plates,
AX Carboic Acid	Cane Syrup	&co., &co.
CURIALS Camphor	Treacle	
COPPER Stearine	Nitrate of Silver	(Pure)
SSIATES Glycerine		
NIDES OLEINE		
ALS		
ERALS		
STONE		
PHUR		

IMPORTERS—Commission Merchants—EXPORTERS.
FUERST BROS.
FOR ALL
HEAVY OR FINE
CHEMICALS,
Pharmaceutical Products,
Photographic Developers,
Drysalteries and Drugs,
Also OILS and PRODUCE.
LONDON: 17, Philpot Lane, E.C. and 2 & 4, Stone Street, NEW YORK.
SAMPLER AND PRICES ON APPLICATION.

Tenders.

COUNTY BOROUGH OF BURY.
TO SULPHURIC ACID MAKERS.

THE Gas Committee of the Bury Corporation are prepared to Receive TENDERS for the SUPPLY of about 300 Tons of SULPHURIC ACID for the Manufacture of Sulphate of Ammonia, for a period of One Year from May 1st 1895.

Forms of Tender and conditions may be obtained on application to Mr. W. H. S. Gendall, Engineer and Manager, Gas Works, Elton, Bury.

Sealed Tenders, endorsed "Tender for Acid," to be sent to me, the undersigned, on or before Monday, April 22nd, 1895.

Preference will be given to those persons or firms who pay to their workpeople the regular standard rate of wages obtaining at the time in the town or district.

JOHN HASLAM,
Town Clerk.

Corporation Offices, Bury,
April 6th, 1895.

COUNTY BOROUGH OF BURY.

THE Gas Committee of the Corporation of Bury are open to Receive TENDERS for the SUPPLY of 250 Tons of OXIDE OF IRON for Gas Purification, to be delivered free, at the Gas Siding, Bury.

Full particulars and Form of Tender may be had on application to Mr. W. H. S. Gendall, Engineer and Manager, Gas Works, Bury.

Sealed Tenders, endorsed "Tender for Oxide of Iron," to be sent to me, the undersigned, on or before Monday, April 22nd, 1895.

Preference will be given to those persons or firms who pay to their workpeople the regular standard rate of wages obtaining at the time in the town or district.

JOHN HASLAM,
Town Clerk.

Corporation Offices, Bury,
April 6th, 1895.

Miscellaneous.

WANTED, a SITUATION as Managing FOREMAN, capable of Manufacturing Chemical Manures and Managing Acid Chambers; twelve years' experience town and country; good references.—Address, "B.A.," *Chemical Trade Journal* Office, Manchester.

WANTED, a SITUATION as FOREMAN, by a Phosphorus Manufacturer; willing to put down a Plant and manage the same.—Address, "Phosphorus," *Chemical Trade Journal* Office, Manchester.

PUPIL.—A well known Mechanical Engineer, member of the Birmingham City Council, has a VACANCY in his office. Subjects: high-class specialities of an advanced type. Residence with principal also if desired.—Address, "Aeronautics," *Chemical Trade Journal* Office, Manchester.

MANUFACTURING Chemist, Well up in Assaying, &c., desires POST as MANAGER OF WORKS; 14 years' experience as Superintendent.—Replies to "Metal," c/o Oldfield, Pattinson and Co., Manchester.

FOR SALE, or would take Partner, SMALL WORKS few miles from Manchester. Suitable for Soda Crystals, Epsoms, Glaubers, or as a Works for treating Galvanizers' Flux Skimmings.—Address, W., *Chemical Trade Journal* Office, Manchester.

WANTED, SPENT OXIDE for Vitriol Making—must be fairly dry.—Apply, "Oxide," *Chemical Trade Journal*, Manchester.

TO BE SOLD, the LANCASHIRE MANURE COMPANY'S WORKS at Widnes, with Machinery and 24,420 square yards of Freehold Land.—Address J. Hosking, 16, Fenwick Street, Liverpool.

FOR SALE—Carbonic Acid Trade, One Set of COMPRESSORS, quite new, for dealing with two tons of Liquid Gas per 24 hours. This machine is fitted with 20 h.p. Vertical Compound Engine, the whole being mounted on one bed-plate, self-contained.—Address, Howard Lane, Engineer, Birmingham.

FOR SALE.—One GAS COMPRESSOR, complete with engine, self-contained, on one bed-plate. This machine is quite new, and capable of compressing 300 cubic feet per hour of oxygen, hydrogen, air, carbonic acid, or other gases to a pressure of 3,000 lb. per sq. in.—Address, Howard Lane, Engineer, Birmingham.

FOR SALE.—One new Vertical COMPOUND STEAM ENGINE, of 20 h.p., with variable expansion gear and "Pickering" governor, high-pressure cylinder 9 1/2 in. diameter, low-pressure 15 in. diameter, stroke 15 in., suitable for 120 to 150 lb. pressure.—Address, Howard Lane, Engineer, Birmingham.

CORRESPONDENCE SOLICITED.

WALKER BROS., ENGINEERS, PAGEFIELD IRONWORKS, WIGAN.

**WALKERS' PATENT
AIR COMPRESSING ENGINES.
GAS COMPRESSING ENGINES.**
150,000 I.H.P. ALREADY AT WORK.

**WALKERS' PATENT
EXHAUST AND BLAST FANS.**

RIVER POLLUTION

DYERS, CALICO PRINTERS, AND OTHERS
readily **PURIFY THEIR WASTE WATERS** by the simple and inexpensive
ALUMINO-FERRIC PROCESS.

Full Particulars on application to—

FRANK SPENCE & SONS, Manchester Alum Works, MANCHESTER.

R. W. GREEFF & CO., EASTCHEAP, LONDON, E.C.

IMPORTERS OF

**ACETONE. ACETIC ACID & SALTS. ALUMINA
SALTS. ANTIMONY SALTS. BARIUM SALTS.
GLYCERINE. LEAD COMPOUNDS. LIME SALTS.
LITHOPONE. OXALIC ACID & SALTS.
POTASH SALTS. SALICYLIC ACID & SALTS.
SODA SALTS. TIN COMPOUNDS. ZINC COMPOUNDS.**

SPECIALITIES

TARTARIC ACID, TARTAR EMETIC, FLUOR/CHROME.

SPECIALITIES:—

ASH 58%	Phosphoric Acid	Castor Oil
POTASHES	Acetates	Olive Oil
SALTCAKE	Oxalic Acid	Essent. Oils
LEACH	Tartaric Acid	Glucose
THIA SALTS	Sulphuric Acid	Grape Sugar
ORAX	Carbolic Acid	Cane Syrup
MERCURIALS	Camphor	Treacle
COPPER	Stearine	Nitrate of Silver
RUSSIAN	Glycerine	(Pure)
ANILIDES	OLEINE	
MINERALS		
BRIMSTONE		
SULPHUR		

Amidol, Metol, Glycin,
Thiocarbamid and other
Photographicals,
Lumieres,
Dry Plates,
&c., &c.

FUERST BROS.
IMPORTERS—Commission Merchants—EXPORTERS.
FOR ALL
HEAVY OR FINE
CHEMICALS,
Pharmaceutical Products,
Photographic Developers,
Drysalteries and Drugs,
Also OILS and PRODUCE.
LONDON: 17, Philpot Lane, E.C. and 2 & 4, Stone Street, NEW YORK.
SAMPLER AND PRICES ON APPLICATION.

Tenders.

ULVERSTON URBAN DISTRICT COUNCIL.

TO TAR DISTILLERS.

THE Gas and Water Committee
Invite TENDERS for the PURCHASE of the
SURPLUS TAR produced at their Gas Works, during
the Year commencing 1st July next.

Further particulars and Forms of Tender may be had on
application to the undersigned.

Sealed Tenders to be sent in not later than the 2nd day
of May, addressed to the Chairman of the Gas and Water
Committee, and endorsed "Tender for Tar."

The Committee do not bind themselves to accept the
highest or any Tender.

J. W. SWAN,
Engineer and Manager.

MANCHESTER CORPORATION GAS WORKS.

AMMONIACAL LIQUOR.

THE Gas Committee of the Cor-
poration of Manchester are prepared to Receive
TENDERS for the PURCHASE and REMOVAL of
the AMMONIACAL LIQUOR to be produced at the
Gaythorn, Rochdale-road, and Bradford-road Gas Works,
during a period of One or more Years, commencing at
noon on the 30th day of June 1895.

The Committee do not bind themselves to accept the
lowest or any Tender.

Sealed Tenders, addressed to the Chairman of the Gas
Committee, and endorsed "Tender for Ammoniacal
Liquor," must be delivered at the Offices of the Gas
Department Town Hall, on or before Friday the 24th of
May, 1895.

Forms of Tender and further particulars may be
obtained on application, in writing only, to Mr. CHARLES
NICKSON, Superintendent of the Department.

A deposit of One Guinea (which will be returned on
receipt of the Tender) must accompany each application for
a Tender Form.

By order of the Gas Committee,
WM. HENRY TALBOT,
Town Clerk.

Town Hall, Manchester,
15th April, 1895.

Miscellaneous.

Freehold Alum China Clay, and Vitriol Works at Rain-
ham, Essex, fitted with fixed plant and machinery.

MESSRS. FULLER, HORSEY,
SONS, & CASSELL are instructed to SELL by
AUCTION, in one lot, on the Premises, on Thursday,
May 31st, at 11 precisely (unless previously sold by private
contract) the valuable FREEHOLD CHEMICAL
WORKS, situate at Rainham Ferry, with the extensive
river frontage of 590 feet, and occupying a ground area of
about 18,000 square yards. The buildings comprise
stores, warehouses, sheds, two chimney shafts, boiler
house, gas house, offices, and the usual chemical factory
erections, and there are also 11 brick-built cottages. The
whole of the fixed plant and machinery, loose tools,
utensils, stock, and stores, more particularly described in a
detailed catalogue, will be included in the purchase, and
possession will be given on completion.

May be viewed by orders, and particulars had of Messrs.
Pickering and Neilson, Solicitors, 4, Stone-Buildings,
Lincoln's Inn, London W.C.; and of the Auctioneers,
11, Billiter-square, London, E.C.

Note—In the event of the works not selling as a whole,
the Freehold will be immediately offered separately, and
afterwards the Plant and Machinery in lots in detail.

To Chemical Manufacturers, Iron and Metal Brokers,
and others.

MESSRS. FULLER, HORSEY,
SONS, & CASSELL will (unless previously sold
as a whole) offer for SALE by AUCTION in lots at the
Alum and China Clay Works, Rainham, Essex, on
Thursday, May 31st, at 11 precisely, PLANT and
MACHINERY, including about 250 tons lead in
chambers, new sheets, and pigs, 200 tons columns,
65 tons wrought and cast iron work, about 10,000
feet (cube) useful timber erection of pyrites kiln, calcining
furnace, and cylinder, jacketed mixer with receiver,
moulding platform and 72-inch guillotine cake cutting
machine disintegrator, set 10 inch crushing rolls, pair of
edge runners, 12-inch Marsden crusher, steam hoist, 25
lead lined and other tanks, pair powerful horizontal air-
compressing engines, three new acid eggs with Cortin's
valves, one pair 10-horse power and a single 4-horse power
horizontal engines, three vertical engines, vertical and
Cornish boilers, two Lancashire steam boilers, Tangy's,
Wilson's, and Worthington pumps, a 40-ton acid barge,
10-inch centre gap bed screw-cutting lathe, weighing
drilling, and mortising machines complete gas plant, two
steam travelling cranes, five skips, 8,000 new Sankey's
and other fire bricks, large quantity lamps, six new nitre pots,
100 tons coal, 30 tons coke, eight tons lime, seven tons
bauxite, five tons nitrate of soda, and chemical stores
various, 150 gallons engine oil, 700 sacks, spring and block
carts, cab, trolleys and barrows various, and numerous
other effects.

May be viewed and catalogues had as in preceding
advertisement.

CORRESPONDENCE SOLICITED.

ABSOLUTELY PURE SULPHURIC ACID

Obtained Free from Ammonia and Nitrogen.

Five Chemicals: Chemical & Physical Apparatus.

PREPARED BY: J. & CO., Ltd., 144 & 146, Edmund Street, BIRMINGHAM.

**STONWARE: ACID PANS, COCKS, RECEIVERS, &c.
JAS. STIFF & SONS,**

LAMBETH, LONDON, S.E.

**MANUFACTURE EVERY KIND OF VITRIFIED STONWARE,
CHEMICAL APPARATUS,
INDUSTRIAL, PATENT JAR, POROUS CELLS, BOTTLES, JARS,
CONCRETE PIPES, PUMPS & FIRE-CLAY CRUCIBLES.**

“ECLECTIC”

THE “**ECLECTIC**” (PATENT)

Is made in DIFFERENT DEGREES OF FINENESS
(VARYING AT WILL)

**MATERIALS OF THE MOST
DIVERSIFIED DESCRIPTION.**

The “**ECLECTIC**” IS ALSO SPECIALLY VALUABLE
FOR **Soda and Chemical Manures.**

WILLIAM PEARCE & CO. in Circular, SENT AT ONCE
on application to



DISINTEGRATOR. The Grinding Machinery Co.
125, MARK LANE, LONDON, E.C.

Telegraphic Address: “**Conveyor**, London.”

SHIPPERS AND EXPORTERS FOR ALL PURPOSES.

**PURE SULPHUROUS ACID,
SULPHITES AND BISULPHITES OF LIME, SODA, &c.
FOR EXPORT.**

S. KINGS & CO. Limited, WEST BROMWICH.

TUBES

IRON and STEEL (hot or lap welded),

and FITTINGS of all kinds.

Specialties: Steam Boilers, Condensers, &c.

Works: 125, MARK LANE, LONDON, E.C.

JOHN B. SPENCER,

125, MARK LANE, LONDON, E.C.

**BRYAN CORCORAN,
MILLSTONE BUILDER,**

WIRE WEAVER, MACHINE MANUFACTURER,

AND GENERAL MILL FURNISHER.

Sole Maker of MILBURN'S

Patent Consolidated Stone Grinding Mills.

Especially suitable for certain

materials, Wet or Dry.

Works and Warehouse:

Back Church Lane, Part of Dept.: Basement of the

Corn Exchange.

31, MARK LANE, LONDON.

CANNINGTON, SHAW & CO., LIMITED,

CARBOYS.

SHEROLEY GLASSWORKS, ST. HELENS.

Manufactured by: SHAW & CO., Limited, 125, MARK LANE, LONDON, E.C.

WALKER BROS., ENGINEERS, PAGEFIELD IRONWORKS, WIGAN.

**WALKERS' PATENT
R COMPRESSING ENGINES.
S COMPRESSING ENGINES.**
150,000 I.H.P. ALREADY AT WORK.

**WALKERS' PATENT
HAUST AND BLAST FANS.**

RIVER POLLUTION

DYERS, CALICO PRINTERS, AND OTHERS
readily **PURIFY THEIR WASTE WATERS** by the simple and inexpensive
ALUMINO-FERRIC PROCESS.

Full Particulars on application to—

ER SPENCE & SONS, Manchester Alum Works, MANCHESTER.

R. W. GREEFF & CO., EASTCHEAP, LONDON, E.C.

IMPORTERS OF

**NETONE. ACETIC ACID & SALTS. ALUMINA
SALTS. ANTIMONY SALTS. BARIUM SALTS.
GERINE. LEAD COMPOUNDS. LIME SALTS.
LITHOPONE. OXALIC ACID & SALTS.
OTASH SALTS. SALICYLIC ACID & SALTS.
A SALTS. TIN COMPOUNDS. ZINC COMPOUNDS.**

SPECIALITIES

TARIC ACID, TARTAR EMETIC, FLUOR/CHROME.

SPECIALITIES—

ASH 58% Phosphoric Acid	Castor Oil	Amidol, Metol, Glycin,
ASHES Acetates	Olive Oil	Thiocarbamid and other
CAKE Oxalic Acid	Essent. Oils	Photographicals,
ACH Tartaric Acid	Glucose	Lumieres,
IA SALTS Salicylic Acid	Grape Sugar	Dry Plates,
AX Carbolio Acid	Cane Syrup	&co., &co.
GURIALS Camphor	Treacle	
COPPER Stearine	Nitrate of Silver	(Pure)
SSIATES Glycerine		
NIDES OLEINE		
ERALS		
STONE		
PHUR		

IMPORTERS—Commission Merchants—EXPORTERS.
FUERST BROS.
FOR ALL
HEAVY OR FINE
CHEMICALS,
Pharmaceutical Products,
Photographic Developers,
Drysalteries and Drugs,
Also OILS and PRODUCE.
LONDON: 17, Philip Lane, E.C. and 2 & 4, Stone Street, NEW YORK.
SAMPLER AND PRICES ON APPLICATION.

Tenders.

TO MANUFACTURING CHEMISTS.

TAR AND AMMONIA WATER.

THE Directors of the Loughborough Gas Company are prepared to Receive **TENDERS** for the **SURPLUS TAR** and **AMMONIA WATER**, to be produced at their Works for One Year, from the 30th day of June.

The estimated quantities will be about 350 tons of Tar, and 900 tons of Ammonia Water. The Tar and Liquor to be delivered into the Contractor's boats at the Wharf, on the Derby-road, Loughborough.

The strength of the Liquor to be tested by Twaddell's hydrometer (temperature 60°) and the Tender to state price per ton of four degrees, rising ½ degree up to eight degrees.

The boats for the removal of the Tar and Liquor to be sent at such times as may be required. Payments 10th of following month.

Further information may be obtained on application to the undersigned, to whom Tenders, in accordance with this advertisement, must be sent not later than the 10th day of May.

The Directors do not bind themselves to accept the highest or any Tender.

J. B. BALL, C.E.
Manager.

Loughborough,
April 26, 1895.

URBAN DISTRICT COUNCIL OF BUXTON.

CONTRACT FOR TAR AND LIQUOR.

THE District Council invite **TENDERS** for the purchase of the **TAR** and **AMMONIACAL LIQUOR** produced at their works in Ashwood Dale, during one or more years.

Particulars to be obtained of Mr. GEO. SMEDLEY, Gas Department, Town Hall, Buxton.

The Council do not guarantee to accept the highest or any Tender.

Tenders, endorsed "Tender for tar, &c.," to be addressed to the Chairman of the Gas Committee, and sent in not later than the 1st of June prox.

By Order,
JOSIAH TAYLOR,
Clerk to the Council.

Buxton,
4th May, 1895.

Miscellaneous.

ADVERTISER, who has large and varied experience in the Management of an Oil, Paint, and Colour Works, and who is well acquainted with the requirements of the Indian, African, and South American markets, is open for an **ENGAGEMENT**.—Address, "No. 564," Robertson & Scott, Advertising Agents, Edinburgh.

ADVERTISER (19), possessing good knowledge of Chemistry and Chemical Analysis, Electricity, and Mathematics, having been employed in Laboratory of well-known Analyst for some time, desires **EMPLOYMENT** in **LABORATORY OF WORKS**.—W. H. C. 171, *Chemical Trade Journal* Office, Manchester.

ADVERTISER, aged 25, ten years in large Sulphate of Copper and Sulphuric Acid Works, desires **ENGAGEMENT** as **CLERK** or any position of trust. Excellent references.—Address, "Sulphate," *Chemical Trade Journal* Office, Manchester.

AN ASSOC. R.C.S. in Chemistry, with first-class experience and highest references, seeks immediate **ENGAGEMENT** as **DEMONSTRATOR** or **MASTER** in **CHEMISTRY**, &c., at Science Institute or Technical College.—Apply, B. J. S. 178, *Chemical Trade Journal* Office, Manchester.

ANALYTICAL and TECHNICAL CHEMIST, with considerable practical experience in works, wishing to change, desires an **APPOINTMENT**, highest references.—Address, J. K. 182, *Chemical Trade Journal* Office, Manchester.

A GENTLEMAN perfectly acquainted with the trade of **CHEMICAL MANURES**, speaking fluently French, German and Dutch, and corresponding in *Spanish* and Italian languages, actually in the situation of a first correspondent in one of the most important Phosphate Manufactories in Germany, wishes a similar **SITUATION** in England.—Apply to H. W. 93, Midmay-road, London, N.

CHEMICAL PLUMBER (experienced) desires **SITUATION** at home or abroad, capable of taking charge of Sulphuric Acid Plant.—Address, "Plomero," *Chemical Trade Journal* Office, Manchester.

CORRESPONDENCE SOLICITED.

DULTON & CO.,**LAMBETH,
LONDON, S.E.**FACTURERS OF
**NEWARE
CHEMICAL
APPARATUS**
OF
DESCRIPTION.OF LISTS
APPLICATION.**IMPROVED
STONEWARE
ACID PUMPS.**Each Pump prior to
leaving the Factory
is put into actual
work and tested.WORKS: 17, Deansgate, Manchester; 100, Soho St., Liverpool;
Granville St., Birmingham; 6, Rue de Paradis, Paris.**SPENCE'S
LUMP ALUM**

(POTASH or AMMONIA).

Leading Make for nearly Half a Century.

PURE SULPHATE OF ALUMINA and ALUMINO-FERRIC.

R SPENCE & SONS, Manchester Alum Works, MANCHESTER.

BLAYDON MANURE AND ALKALI COMP.'S
**WHITE SULPHATE OF ALUMINA,
BLANC FIXE, CHLORIDE, NITRATE,
AND SULPHIDE OF BARIUM.**

UNITED ALKALI COMP.'S

HYPO-SULPHITE OF SODA,

WALTHER FELD & CO.'S

PRECIP. CARBONATE OF BARYTES 96/98%.Hydrate and Anhydrous Alumina, Chloride and Carbonate of
Alumina, Aluminate of Soda, Hydrate of Barium, &c.

S: JULIUS HULSEN & CO., NEWCASTLE-ON-TYNE.

OVER 25,000 ARE WORKING.

BOILING NOZZLES.	SILENT HEATERS.	VACUUM EJECTORS.	AIR, &c. EXHAUSTERS.
---------------------	--------------------	---------------------	-------------------------

URN & HALL Chief Office } 63, Royal Exchange, MANCHESTER.**Tenders.**

URBAN DISTRICT COUNCIL OF BUXTON.

CONTRACT FOR TAR AND LIQUOR.

THE District Council invite **TEN-**
DERS for the purchase of the **TAR** and
AMMONIACAL LIQUOR produced at their works in
Ashwood Dale, during one or more years.Particulars to be obtained of Mr. GEO. SMEDLEY, Gas
Department, Town Hall, Buxton.The Council do not guarantee to accept the highest or
any Tender.Tenders, endorsed "Tender for tar, &c.," to be addressed to
the Chairman of the Gas Committee, and sent in not
later than the 1st of June prox.

By Order,

JOSIAH TAYLOR,
Clerk to the Council.Buxton,
4th May, 1895.

TO OXIDE OF IRON MERCHANTS.

THE Corporation of Birkenhead are
prepared to Receive **TENDERS** for the **SUPPLY**
of 350 Tons of **OXIDE OF IRON**.Forms of Tender and other information may be obtained
from Mr. T. O. PATERSON, Gas Engineer, Gas Works,
Thomas-street.Tenders, sealed and endorsed "Tender for Oxide of
Iron," to be sent in to me not later than 5 p.m. on Friday,
the 24th May, 1895.Deliveries to be made within one month of written in-
structions from the Gas Engineer.The Corporation do not bind themselves to accept the
lowest or any Tender.

By order,

ALFRED GILL,
Town Clerk.Town Hall, Birkenhead,
11th May, 1895.ROCHESTER, CHATHAM, AND STROOD
GASLIGHT COMPANY.

TAR AND AMMONIACAL LIQUOR.

THE Directors are prepared to Re-
ceive **TENDERS** for the **PURCHASE** of the
SURPLUS TAR and **AMMONIACAL LIQUOR** to be
produced at their Works at Rochester and Gillingham, for
One Year, commencing the 1st of July next.The quantity of Tar will be about 350,000 gallons; of
Liquor, about 650,000 gallons.Further particulars, with Forms of Tender and contract,
may be had on application.Tenders marked "Tar" or "Liquor," are to be delivered
to me at these Offices, not later than noon of Thursday,
the 23rd of May, 1895.The Directors do not undertake to accept any Tender;
and security for due fulfilment of the contract must be
given if required.

J. M. VEEVERS,

General Manager.

Gas Offices: 95, High-street, Rochester.
May 9th, 1895.**TAR.****THE** Gas Committee of the Penrith
Urban District Council are prepared to Receive
TENDERS for the **PURCHASE** of the **SURPLUS**
TAR produced at their Gas Works during the year end-
ing 30th June, 1896.Contractors to supply tank-cart for conveyance to the
Railway Station.Tenders quoting price per ton delivered into tanks on
rail, to be delivered to the undersigned not later than
Saturday next, May 25th.

E. SHAUL,

Manager.

Penrith,
May 15, 1895.**Miscellaneous.**

NORTH DEAN,

SALTERHEBBLE, near HALIFAX,

Five Minutes' walk from Greetland Station, L. & Y. Ry.

To Chemical Manufacturers, Machine and Metal Brokers,
Engineers, Builders, and Others.**MESSRS. WALMSLEY & SONS**
have received instructions TO SELL on the
Premises of the **NORTH DEAN CHEMICAL WORKS**,
by Public Auction, without reserve, on **MONDAY** and
TUESDAY, the 20th and 21st days of May, 1895, at 11 o'clock
punctually each day, **THE EXTENSIVE CHEMICAL**
MANUFACTURING PLANT, Loose Items, Wherries,
Carts, Tar Barrels, Railway Tanks, Canal Boats, and
Effects.**TAR PLANT.**—32 Cornish and Wagon Boiler Tanks,
two 9-in. Ram Hydraulic Presses, Hydraulic Press Pump
and Engine, ten Steam Pumps, Gristing Mill and Engine,
German Filter Press, 16 W. and C. I. Tanks, seven Half
Boiler Tanks, twelve Half Boiler Flues, Two Vertical
Engines, two Vertical Boilers, four W.I. Tar Stills, C.I.

(SEE OVER.)

DULTON & CO.,LAMBETH,
LONDON, S.E.MANUFACTURERS OF
STONEWARE
CHEMICAL
APPARATUS
OF
DESCRIPTION.SPECIFICATIONS
APPLICATION.

ACID PUMP

IMPROVED
STONEWARE
ACID PUMPS.Each Pump prior to
leaving the Factory
is put into actual
work and tested.WORKS: 17, Deansgate, Manchester; 100, Soho St., Liverpool;
Granville St., Birmingham; 6, Rue de Paradis, Paris.**SPENCE'S
LUMP ALUM**

(POTASH or AMMONIA).

Leading Make for nearly Half a Century.

PURE SULPHATE OF ALUMINA and ALUMINO-FERRIC.

R SPENCE & SONS, Manchester Alum Works, MANCHESTER.

BLAYDON MANURE AND ALKALI COMP.'S
E WHITE SULPHATE OF ALUMINA,
BLANC FIXE, CHLORIDE, NITRATE,
AND SULPHIDE OF BARIUM.UNITED ALKALI COMP.'S
HYPO-SULPHITE OF SODA,
WALTHER FELD & CO.'S

PRECIP. CARBONATE OF BARYTES 96/98%.

Hydrate and Anhydrous Alumina, Chloride and Carbonate of
Alumina, Aluminate of Soda, Hydrate of Barium, &c.

ts: JULIUS HULSEN & CO., NEWCASTLE-ON-TYNE.

OVER 25,000 ARE WORKING.

BOILING
NOZZLES. SILENT
HEATERS. VACUUM
EJECTORS. AIR, &c.
EXHAUSTERS.

URN & HALL Chief office 63, Royal Exchange, MANCHESTER.

Tenders.

SCARBOROUGH GAS COMPANY.

TAR AND AMMONIACAL LIQUOR.

THE Directors of the Scarborough
Gas Company Invite TENDERS for the SURPLUS
TAR and the whole of the AMMONIACAL LIQUOR to
be produced at their works for one or more years from the
1st day of July next.Tenders for Liquor may be submitted either at a fixed
price per ton or on a sliding scale, regulated by the price of
Sulphate. Preference will, however, be given to the latter.
Further particulars may be obtained on application to
the undersigned, to whom sealed Tenders, duly endorsed,
must be delivered not later than noon on Saturday, the 15th
day of June next.The Directors do not bind themselves to accept the
lowest or any tender.

By Order of the Board,

J. HOLLIDAY,

Engineer & Secretary.

Gas Offices:

32, Westborough, Scarborough,
May 17th, 1895.**Miscellaneous.**Replies to Advertisements addressed to the
"Chemical Trade Journal" Office are forwarded to
Advertisers, post free.

CHEMICAL WORKS FOR SALE.

The WORKS OF DONALD'S CHLORINE SYNDI-
CATE, at Longford, Kilminning, Ayrshire.THE Works have been erected in a
most substantial manner at a large cost, for the
purpose of Manufacturing Chlorine from Hydrochloric
Acid under the process invented by Mr. William Donald
and for the recovery of bye-products formed during the
operation.The business includes the Manufacture of Bleaching
Powder, Chlorate of Potash, Chlorate of Soda, and Salt-
cake for which there is a large market.The Buildings and Plant are extensive and include
Chlorine Plant, Drying Towers, Oxidising Towers,
Decomposing Plant, Recovery Plant, Bleach Chambers,
Refrigerator, Engines, Boilers, Steam Pipes, Laboratory
and other Apparatus, and Plant, suitable for carrying on
a large business in Chlorine Manufacture or for other
Chemical Processes.There is a railway connection with ample siding
accommodation throughout the Works. Any Moveable
Plant and Stock remaining on the Premises may be taken
by the purchaser at a valuation.The Ground, extending to 3½ acres, is held on lease at
a moderate rent, with right to obtain a perpetual fee.

Offers will be received until 7th June, 1895.

Fully detailed Inventories may be seen in the hands of,
and orders to view may be obtained from J. M. TAYLOR
and FOULIS, Writers, 120, St Vincent-street, Glasgow.PATENTS, DESIGNS AND TRADE MARKS ACTS,
1883 TO 1888.NOTICE is hereby given that The
Cassel Gold Extracting Company, Limited, of 108a,
Hope-street, Glasgow, County Lanark, North Britain, has
applied for leave to amend the specification of the Letters
Patent, No. 14174, of 1887, granted to John Stewart Mac
Arthur, Robert Wardrop Forrest, and William Forrest, for
"Improvements in obtaining gold and silver from ores and
other compounds."Particulars of the proposed amendments were set forth
in the *Illustrated Official Journal* (Patents), issued on
the 22nd May, 1895.Any person, or persons, may give notice of opposition to
the amendment (on Form G) at the Patent Office, 25,
Southampton Buildings, London, W.C., within one calendar
month from the date of the said Journal.

(Signed) H. READER LACK,

Comptroller-General.

Allison Bros., Patent Agents,
52, Chancery Lane, London.**CONSULTING CHEMIST and**Chemical Engineer of high repute, has a vacancy for
a Pupil or an Improver; premium required.—Address, J.
L. 202, *Chemical Trade Journal* Office, Manchester.**ADVERTISER desires appointment**as Chemical Works Manager, home or colonies; has
had 16 years' experience in the erection and management
of plant. Good Technical Chemist, accustomed to work-
ing up new processes; excellent references.—Address,
"Practical," *Chemical Trade Journal* Office, Manchester.

Miscellaneous.—Cont.

MECHANIC desires Change; 16 years' experience in a Chemical Works making Vitriol, Bleach, Alkali, Caustic Soda. Thoroughly understands Engines, Boilers, and Pumps, etc.—Address, "Mechanic," *Chemical Trade Journal* Office, Manchester.

WANTED, a **SITUATION** as Chemical Plumber and Lead Burner. Good references given.—Address, "Plumber," *Chemical Trade Journal*.

WORKS CHEMIST, with experience in a large Chemical Works, and in the Laboratory of a first-class Analyst, wants **SITUATION** as Chemist or Assistant Manager; moderate salary.—Apply, W. 215, *Chemical Trade Journal* Office, Manchester.

TO BE LET.—The Aqueduct Works, Marple, lately in the occupation of The Marple Chemical Company, suitable for horn pith, precipitated phosphate, chemical or artificial manure works; good railway and canal accommodation. Apply for further particulars, "Horn Piths," *Chemical Trade Journal* Office, Manchester.

FOR SALE, or would take Partner, **SMALL WORKS** few miles from Manchester. Suitable for Soda Crystals, Epsoms, Glaubers, or as a Works for treating Galvanizers' Flux Skimmings.—Address W., *Chemical Trade Journal* Office, Manchester.

TO BE SOLD, the **LANCASHIRE MANURE COMPANY'S WORKS** at Widnes with Machinery and 24,420 square yards of Freehold Land.—Address J. Hosking, 16, Fenwick Street, Liverpool.

CARBONATE OF BARYTES FOR SALE.—No. 1, 95 to 98 p. c.; No. 2, 92 to 95 p. c. Apply, "Barytes," *Chemical Trade Journal* Office, Manchester.

PAINT MANUFACTURERS.—Valuable **BARYTES WORKS**, well known in South Wales; total purchase about £600, including the capital, plant, stock, &c.; low rental; excellently fitted; certain fortune in business hands.—Frederic Goodeve, Business Valuer, Cannon-street, Birmingham.

FOR Sale, one **C.I. TANK** (new), 8 ft. x 8 ft. x 2 ft. 6 in. Also Second-hand **STEAM PUMP**, equal to new; will deliver 800 gallons per hour.—Address, "Tank," *Chemical Trade Journal* Office, Manchester.

NEW RECIPES, INVENTIONS, & SPECIALITIES in Oils, Greases, Soaps, Paints, Varnishes, Enamels, Blackings, Blues, Polishes, etc., etc., practical working recipes with latest improved English, Continental and American methods, Prize and Gold Medal brands. Cheapened Substitutes, Utilization of Wastes and Refuse, etc.; any samples matched. Write for Lists.—Lewis Jameson, Balmoral buildings, 91, Queen Victoria-street, London, E.C., and at 47, College-street, Illington, London, N.

FOR SALE.—One 3 ft. dia. **DISINTEGRATOR** for grinding bones, chemicals, paints, etc.; 1 ft. dia. Disintegrator for grinding bones, chemicals, paints, etc. One 9 x 5 Blake **STONE-BREAKER**. One Ball **MILL** for cements, phosphates, etc. A large quantity of Elevator Chains and Buckets at very low prices.—Apply, C. E. Hall, 55, Norfolk-street, Sheffield.

DISINTEGRATORS.—A New Machine for £12, second to none, with 18 inch grinding chamber. Also Mortar Mill, 3 ft. 6 in. pan; for £14. A 10 x 5 New Stone Breaker, for £28; larger sizes in proportion, or can be had on hire, with option of purchase.—Mason Bros., late S. Mason and Co., Stone Breaking and Grinding Machine Makers, Brandon-street, Leicester.

PLATINUM Utensils, Scrap, Lamp Eads, etc. Best Prices given by Derby and Co., 46, Clerkenwell Road, London, E.C. N.B.—Platinum sold.

SULPHATE of Lime, calcined, For Sale, cheap, in large and regular quantities.—Address Sadler & Co., Limited, Middlesbrough.

AMMONIA, all qualities and strengths. Enquiries solicited. *Brownlie & Co., Birmingham, Leeds, and Wakefield*

ABSOLUTELY PURE

SULPHURIC ACID

Guaranteed Free from Ammonia and Nitrogen.

Pure Chemicals. Chemical & Physical Apparatus

PHILIP HARRIS & CO., Ltd., 144 & 146, Edmund Street, BIRMINGHAM**STONEWARE ACID PANS, COCKS, RECEIVERS, JAS. STIFF & SONS**

LAMBETH, LONDON, S.E.

MANUFACTURE EVERY KIND OF VITRIFIED STONE **CHEMICAL APPARATUS**, INSULATORS, BATTERY JARS, POROUS CELLS, BOTTLES, CONDENSING WORMS, PLUMBAGO & FIRE-CLAY CRUCIBLES.**PURE SULPHUROUS ACID****SULPHITES AND BISULPHITES OF LIME, SODA FOR EXPORT.****S. KEYS & CO. Limited, WEST BROMWICH****"ECLECTIC" (PATENT)**THE **"ECLECTIC"** (PATENT)

For Grinding in DIFFERENT DEGREES OF FINENESS (VARIED AT WILL)

MATERIALS OF THE MOST DIVERSIFIED DESCRIPTIONThe **"ECLECTIC"** IS ALSO SPECIALLY VALUABLE FOR **Bone and Chemical Manures.**

FULLEST PARTICULARS contained in Circular, SENT AT ON APPLICATION TO

DISINTEGRATOR, The Grinding Machinery, 16, Mark Lane, London, E.C.

Each Machine fitted with our Patent Return Air Chamber.

Telegraphic Address—"Conveyor," CONVEYORS AND ELEVATORS FOR ALL PURPOSES.

TUBES**IRON and STEEL** (butt or lap welded), and **FITTINGS** for Gas, Water, Steam, Liquid Ammonia, and Hydraulic Work, galvanised white enamelled inside, or coated by Dr. Angus Smith's Composition. In stock to 8 in. diameter. **COILS** for heating, super-heating, distilling and refrigerating purposes, to 500 feet long without joints.**JOHN SPENCER**, Globe Tube Works, Wednesbury, and 14, Great St. Thomas Apostle, Cannon-st., London, E.C.**BRYAN CORCORAN****MILLSTONE BU** WIRE WEAVER, MACHINE MA AND GENERAL MILL FU Sole Maker of MILL Patent Conoidal Stone Cr Especially suitable for materials, Wet or Works and Warehou Back Church Lane. Parcel Dept.: Basin Corn Exchange. 31, MARK LANE, LON**CANNINGTON, SHAW & CO., LIMITED****CARBOYS.****SHERDLEY GLASSWORKS, ST. HELENS**

Liverpool: Exchange Chambers. Glasgow: West Campbell-st.

WALKER BROS., ENGINEERS, PAGEFIELD IRONWORKS, WIGAN.

WALKERS' PATENT
AIR COMPRESSING ENGINES.
AS COMPRESSING ENGINES.
150,000 I.H.P. ALREADY AT WORK.

WALKERS' PATENT
EXHAUST AND BLAST FANS.

RIVER POLLUTION

DYERS, CALICO PRINTERS, AND OTHERS
readily PURIFY THEIR WASTE WATERS by the simple and inexpensive
ALUMINO-FERRIC PROCESS.

Full Particulars on application to—

TER SPENCE & SONS, Manchester Alum Works, MANCHESTER.

R. W. GREEFF & CO., EASTCHEAP, LONDON, E.C.

IMPORTERS OF

CETONE. ACETIC ACID & SALTS. ALUMINA
SALTS. ANTIMONY SALTS. BARIUM SALTS.
YCERINE. LEAD COMPOUNDS. LIME SALTS.
LITHOPONE. OXALIC ACID & SALTS.
POTASH SALTS. SALICYLIC ACID & SALTS.
DA SALTS. TIN COMPOUNDS. ZINC COMPOUNDS.

SPECIALITIES

TARTARIC ACID, TARTAR EMETIC, FLUOR/CHROME.

SPECIALITIES—

DA ASH 58%	Phosphoric Acid	Castor Oil	Amidol, Metol, Glycin,
ITASHES	Acetates	Olive Oil	Thiocarbamid and other
ALTCAKE	Oxalic Acid	Essent. Oils	Photographicals,
LEACH	Tartaric Acid	Glucose	Lumières,
THIA SALTS	Salicylic Acid	Grape Sugar	Dry Plates,
ORAX	Carbolic Acid	Cane Syrup	&c., &c.
ERCURIALS	Camphor	Treacle	
UL COPPER	Stearine	Nitrate of Silver	
RUSSIATES	Glycerine	(Pure)	
YANIDES	OLEINE		
ETALS			
MINERALS			
CRIMSTONE			
ULPHUR			

IMPORTERS—Commission Merchants—EXPORTERS.
FUERST BROS.
HEADQUARTERS
FOR ALL
HEAVY OR FINE
CHEMICALS,
Pharmaceutical Products,
Photographic Developers,
Drysalteries and Drugs,
Also OILS and PRODUCE.
LONDON: 17, Philip Lane, E.C. and 2 & 4, Stone Street, NEW YORK.
SAMPLER AND PRICES ON APPLICATION.

Tenders.

SCARBOROUGH GAS COMPANY.

TAR AND AMMONIACAL LIQUOR.

THE Directors of the Scarborough Gas Company invite TENDERS for the SURPLUS TAR and the whole of the AMMONIACAL LIQUOR to be produced at their works for one or more years from the 1st day of July next.

Tenders for Liquor may be submitted either at a fixed price per ton or on a sliding scale, regulated by the price of Sulphate. Preference will, however, be given to the latter.

Further particulars may be obtained on application to the undersigned, to whom sealed Tenders, duly endorsed, must be delivered not later than noon on Saturday, the 15th day of June next.

The Directors do not bind themselves to accept the lowest or any tender.

By Order of the Board,
J. HOLLIDAY,

Engineer & Secretary.

Gas Offices:

32, Westborough, Scarborough
May 17th, 1895.

LONGWOOD GAS COMPANY.

TAR AND AMMONIACAL LIQUOR.

THE Directors of the above Company are prepared to receive TENDERS for the purchase of the surplus Tar and Ammoniacal Liquor made at their Works during the year ending June 30th, 1896.

Price per ton for Liquor per degree at 5° and 6° Twaddel. The estimated quantity for disposal is about 1,000 tons.

Tenders, sealed and endorsed, to be sent in not later than Tuesday, June 18th, 1895, addressed to EDWARD ARMITAGE, Esq., J.P., Chairman Longwood Gas Company, Longwood, Huddersfield.

JOHN L. MITTON,
Manager and Secretary.

Miscellaneous.

Replies to Advertisements addressed to the "Chemical Trade Journal" Office are forwarded to Advertisers, post free.

TO CHEMISTS.—The Directors of the Sheffield United Gas Light Company require a Chemist; one who has a knowledge of Gas-works preferred. He will be required to make Analyses of Gas Residuals, and various products therefrom, and of all material used in the manufacture of Gas, or in connection therewith. The whole of his time must be devoted to the service of the Company. Applications (marked "Chemist"), stating qualifications, age, salary required, previous engagements, &c., to be sent in not later than June 15th, addressed to the undersigned. Testimonials not to be sent till asked for.—Hanbury Thomas, General Manager, Gas Company' Offices, Commercial-street, Sheffield, June 1st, 1895.

CONSULTING CHEMIST and Chemical Engineer of high repute, has a vacancy for a Pupil or an Improver; premium required.—Address, J. L. 202, Chemical Trade Journal Office, Manchester.

MECHANIC desires Change; 26 years' experience in a Chemical Works making Vitriol, Bleach, Alkali, Caustic Soda. Thoroughly understands Engines, Boilers, and Pumps, etc.—Address, "Mechanic," Chemical Trade Journal Office, Manchester.

WANTED JUNIOR CHEMIST in Sulphuric and Nitric Acid Works.—Apply, I. Levinstein & Co., Limited, Manchester.

FOR SALE, or would take Partner, SMALL WORKS few miles from Manchester. Suitable for Soda Crystals, Epsoms, Glaubers, or as a Works for treating Galvanizers' Flux Skimmings.—Address W., Chemical Trade Journal Office, Manchester.

TO BE SOLD, the LANCASHIRE MANURE COMPANY'S WORKS at Widnes with Machinery and 24,400 square yards of Freehold Land.—Address J. Hosking, 16, Fenwick Street, Liverpool.

QUESTIONS SOLICITED.

Miscellaneous.—Cont.

TO BE LET.—The Aqueduct Works, Marple, lately in the occupation of The Marple Chemical Company, suitable for horn pith, precipitated phosphate, chemical or artificial manure works; good railway and canal accommodation. Apply for further particulars, "Horn Pith," *Chemical Trade Journal* Office, Manchester.

FOR Sale, one C.I. TANK (new), 8 ft. x 8 ft. x 2 ft. 6 in. Also Second-hand STEAM PUMP, equal to new; will deliver 800 gallons per hour.—Address, "Tank," *Chemical Trade Journal* Office, Manchester.

NEW RECIPES, INVENTIONS, & SPECIALITIES in Oils, Greases, Soaps, Paints, Varnishes, Enamels, Blackings, Blues, Polishes, etc., etc., practical working recipes with latest improved English, Continental and American methods, Prize and Gold Medal brands. Cheapened Substitutes, Utilization of Wastes and Refuse, etc.; any samples matched. Write for Lists.—Lewis Jameson, Balmoral buildings, 91, Queen Victoria-street, London, E.C., and at 47, College-street, Islington, London, N.

FOR SALE.—One 3 ft. dia. **DISINTEGRATOR** for grinding bones, chemicals, paints, etc.; One 1 ft. dia. Disintegrator for grinding bones, chemicals, paints, etc. One 9 x 5 Blake **STONE-BREAKER**. One **Hall MILL** for cements, phosphates, etc. A large quantity of Elevator Chains and Buckets at very low prices.—Apply, C. E. Hall, 55, Norfolk-street Sheffield.

PLATINUM Utensils, Scrap, Lamp Ends, etc. Best Prices given by Derby and Co., 44, Clerkenwell Road, London, E.C. N.B.—Platinum Sold.

SULPHATE of Lime, calcined, For Sale, cheap, in large and regular quantities.—Address Sadler & Co., Limited, Middlesbrough.

AMMONIA, all qualities and strengths. Enquiries solicited. **BROTHERTON & Co.**, Birmingham, Leeds, and Wakefield.

MANURE & CEMENT PLANT

Grinding and Crushing Machinery

VICKERS' MIXERS.

PRATCHITT BROTHERS, Carlisle.

J. S. MERRY & CO.,

ASSAYERS and ANALYTICAL CHEMISTS
SWANSEA.

Weighing and Sampling of Minerals, Metals, and Metal Products superintended.

HARPER'S LIST

OF ACCESSORIES for the TRANSMISSION of POWER, viz.:—BELT PULLEYS, ROPE PULLEYS, GEAR WHEELS, SHAFTING, COUPLINGS, PEDESTALS, FIXINGS; appears on Pages 14 and 15 of the first *Chemical Trade Journal* of each month.

Telegraph Address:—"VARLEY, ST. HELENS."
ESTABLISHED 1838.

JOHN VARLEY & CO.,

ENGINEERS,
WATERLOO FOUNDRY,
ST. HELENS.

SPECIALITIES:

SALTCAKE POTS. CAUSTIC POTS.
NITRIC ACID RETORTS. ACID EGGS.
STILLS FOR TAR DISTILLERS.

**ABSOLUTELY PURE
SULPHURIC ACID**

Guaranteed Free from Ammonia and Nitrogen.

Pure Chemicals. Chemical & Physical Apparatus

PHILIP HARRIS & CO., Ltd., 144 & 146, Edmund Street, BIRMINGHAM

**STONEWARE ACID PANS, COCKS, RECEIVERS, &
JAS. STIFF & SONS,**

LAMBETH, LONDON, S.E.,

MANUFACTURE EVERY KIND OF VITRIFIED STONEWARE

CHEMICAL APPARATUS,

**INSULATORS, BATTERY JARS, POROUS CELLS, BOTTLES, JARS,
CONDENSING WORMS, PLUMBAGO & FIRE-CLAY CRUCIBLES.**

**"ECLECTIC"
(PATENT)****THE "ECLECTIC" (PATENT)**

For Grinding in DIFFERENT DEGREES OF FINE
(VARIED AT WILL)

**MATERIALS OF THE MOST
DIVERSIFIED DESCRIPTION**

The "ECLECTIC" IS ALSO SPECIALLY VALUABLE
FOR **Bone and Chemical Manures.**

FULLEST PARTICULARS contained in Circular, SENT AT ONCE
on application to

DISINTEGRATOR. The Grinding Machinery

Each Machine fitted with our **Patent Return Air Chamber.**
16, Mark Lane, London, E.C.

Telegraphic Address—"Conveyor, Ltd."
CONVEYORS AND ELEVATORS FOR ALL PURPOSES.

PURE SULPHUROUS ACID

SULPHITES AND BISULPHITES OF LIME, SODA,

FOR EXPORT.

S. KEYS & CO. Limited, WEST BROMWICH

TUBES

IRON and STEEL (butt or lap welded),
and **FITTINGS** for Gas, Water, Steam, Liquid
Ammonia, and Hydraulic Work,
galvanized white enamelled inside, or coated by Dr. Angus
Smith's Composition. In stock to 8 in. diameter.

COILS for heating, super-heating, distilling and
refrigerating purposes, to 500 feet long without joints.

JOHN SPENCER,

Globe Tube Works, Wednesbury, and 14, Great St.
Thomas Apostle, Cannon-st., London, E.C.

BRYAN CORCORAN

MILLSTONE BUILDING



WIRE WEAVER, MACHINE MAKER

AND GENERAL MILL FURNISHING

Sole Maker of **MILNOR**

Patent Conoidal Stone Grind

Especially suitable for

materials, Wet or Dry

Works and Warehouses

Back Church Lane. Parcel Dept.: Basom

Corn Exchange.

31, MARK LANE, LONDON

CANNINGTON, SHAW & CO., LIMITED,**CARBOYS.**

SHERDLEY GLASSWORKS, ST. HELENS

Liverpool: Exchange Chambers.
Glasgow: West Campbell-st.

WALKER BROS., ENGINEERS, PAGEFIELD IRONWORKS, WIGAN.

WALKERS' PATENT
R COMPRESSING ENGINES.
S COMPRESSING ENGINES.
150,000 I.H.P. ALREADY AT WORK.

WALKERS' PATENT
HAUST AND BLAST FANS.

EVERY POLLUTION

DYERS, CALICO PRINTERS, AND OTHERS
Purify their WASTE WATERS by the simple and inexpensive
ALUMINOFERRIC PROCESS.

Full Particulars on application to—

R SPENCE & SONS, Manchester Alum Works, MANCHESTER.

R. W. GREEFF & CO., EASTCHEAP, LONDON, E.C.

IMPORTERS OF

ETONE. ACETIC ACID & SALTS. ALUMINA
SALTS. ANTIMONY SALTS. BARIUM SALTS.
DERINE. LEAD COMPOUNDS. LIME SALTS.
LITHOPONE. OXALIC ACID & SALTS.
TASH SALTS. SALICYLIC ACID & SALTS.
A SALTS. TIN COMPOUNDS. ZINC COMPOUNDS.
SPECIALITIES
TARIC ACID, TARTAR EMETIC, FLUOR/CHROME.

SPECIALITIES—

ASH 58%	Phosphoric Acid	Castor Oil	Amidol, Metol, Glycin,
SHES	Acetates	Olive Oil	Thiocarbamid and other
CAKE	Oxalic Acid	Essent. Oils	Photographicals,
CH	Tartaric Acid	Glucose	Lumieres,
ASALTS	Sulloylic Acid	Grape Sugar	Dry Plates,
X	Carbolic Acid	Cane Syrup	&c., &c.
URIALS	Camphor	Treacle	
COPPER	Stearine	Nitrate of Silver	
BIATES	Glycerine	(Pure)	
HES	OLEINE		
LS			
RALS			
STONE			
MUR			

IMPORTERS—Commission Merchants—EXPORTERS.
FUERST BROS.
HEADQUARTERS
FOR ALL
HEAVY OR FINE
CHEMICALS,
Pharmaceutical Products,
Photographic Developers,
Drysalteries and Drugs,
Also OILS and PRODUCE.
LONDON: 17, Philip Lane, E.C. and 2 & 4, Stone Street, NEW YORK.
Telegrams—
FURST, LONDON.
SAMPLES AND PRICES ON APPLICATION.

Tenders.

BRIERLEY HILL GAS COMPANY.

TENDERS FOR TAR.

THE Directors of the above Company are prepared to Receive TENDERS for SURPLUS TAR made at their Brierley Hill and Kingswinford Works, for One Year ending 30th of June, 1896, delivered into Boats at the former place in one hour and at the latter in twelve hours.

Tenders to be addressed to the Chairman, and delivered not later than the 4th of July next.

The Directors do not bind themselves to accept the highest or any tender.

HENRY M. JACKSON,

Secretary.

Gasworks, Brierley Hill,
10th June, 1895.

BRIERLEY HILL GAS COMPANY.

TENDERS FOR AMMONICAL LIQUOR.

THE Directors of the above Company are prepared to Receive TENDERS for AMMONICAL LIQUOR made at their Brierley Hill and Kingswinford Works for a period of One or more Years, commencing 1st August, 1895.

Tenders to be addressed to the Chairman not later than the 4th July next.

The Directors do not bind themselves to accept the highest or any tender.

HENRY M. JACKSON,

Secretary.

Gasworks, Brierley Hill,
10th June, 1895.

LEEK URBAN DISTRICT COUNCIL.

TO TAR DISTILLERS AND OTHERS.

TENDERS are invited for the purchase of the SURPLUS GAS TAR produced at the Leek Gas Works, for one, two, or three years, from the 1st of July, 1895, at per ton of 2,240 lbs. at such Works.

Endorsed Tenders, addressed to the Chairman of the Gas Committee, to be delivered at the Town Hall, Leek, by four o'clock in the afternoon of Friday, the 28th of June inst.

Forms of Tenders and further particulars may be obtained from the undersigned.

The highest or any Tender will not necessarily be accepted.

By order of the Council,

C. HENSHAW,

Clerk.

Town Hall, Leek,
June 14, 1895.

Miscellaneous.

Replies to Advertisements addressed to the "Chemical Trade Journal" Office are forwarded to Advertisers, post free.

CHLORATE OF POTASH.—

WANTED a CHEMIST, thoroughly competent, to undertake this manufacture, and able to supervise the erection of plant for same—Apply confidentially, giving full particulars of previous experience, and salary required, to "Chlorate," Chemical Trade Journal Office, Manchester.

WORKS MANAGER.—Wanted,

an UNDER MANAGER, who thoroughly understands caustic soda and soda ash and vitriol making, in a large Works in Lancashire. Must have a good technical knowledge of chemistry, and conversant with German.—Address, "Soda," Chemical Trade Journal Office, Manchester.

AGENTS for Tartar Emetic, Oxide

of Tin, and Glazing Ashes, well connected with trade, wanted in all respective centres of Great Britain and Ireland. Address: "Emetic," Chemical Trade Journal Office, Manchester.

ANALYTICAL and Technical

Chemist will shortly be open for re-engagement; has had considerable practical experience in the manufacture of Sulphuric Acid from Brimstone and Pyrites, Hydrochloric and Nitric Acids, Tin Salts, Chlorate of Potash, Chemical Manures, &c. Highest references.—Address, A T 247, Chemical Trade Journal Office, Manchester.

BELGIAN GENTLEMAN, age 35,

not speaking English fluently, good Analytical Chemist, seeks SITUATION as Assistant in Laboratory; Diploma. Address, M. 239, Chemical Trade Journal Office, Manchester.

CORRESPONDENCE SOLICITED.

Miscellaneous.—Cont.

MECHANIC desires Change; 16 years' experience in a Chemical Works making Vitriol, Potash, Alkali, Caustic Soda. Thoroughly understands Engines, Boilers, and Pumps, etc.—Address, *Chemical Trade Journal Office, Manchester.*

CO. ENGINE WANTED; capacity about 4,000 cubic feet per hour.—Address, B. 232, *Chemical Trade Journal Office, Manchester.*

WANTED No. 351 of *Chemical Trade Journal*, being the issue of February 10th 1894. Address *E. Chemical Trade Journal Office, Manchester.*

WANTED, Small Second-hand Brass or Hard Lead Filter-Press, with 4 to 6 Leaves.—Address, O 246, *Chemical Trade Journal Office, Manchester.*

FOR SALE, or would take Partner, **SMALL WORKS** few miles from Manchester. Suitable for Soda Crystals, Epsoms, Glaubers, or as a Works for treating Galvanizers' Flux Skimmings.—Address *W., Chemical Trade Journal Office, Manchester.*

TO BE SOLD, the **LANCASHIRE MANURE COMPANY'S WORKS** at Widnes with Machinery and 24,420 square yards of Freehold Land.—Address *J. Hosking, 16, Fenwick Street, Liverpool.*

TO BE LET.—The **Aqueduct Works**, Marple, lately in the occupation of The Marple Chemical Company, suitable for horn pith, precipitated phosphate, chemical or artificial manure works; good railway and canal accommodation. Apply for further particulars, "Horn Piths," *Chemical Trade Journal Office, Manchester.*

NEW RECIPES, INVENTIONS, & SPECIALITIES in Oils, Greases, Soaps, Paints, Varnishes, Enamels, Blackings, Blues, Polishes, etc., etc., practical working recipes with latest improved English, Continental and American methods, Prize and Gold Medal brands. Cheapened Substitutes, Utilization of Wastes and Refuse, etc.; any samples matched. Write for Lists.—*Lewis Jameson, Balmoral-buildings, 97, Queen Victoria-street, London, E.C., and at 47, College-street, Islington, London, N.*

A STEAM FILTER PRESS (Johnson) with 20 22-inch plates—engine, pump, and copper air-vessel. Price, £45.—*R. W. Andrews and Co., 24, Grays Inn-road, London, W.C.*

FOR SALE.—One 3 ft. dia. **DISINTEGRATOR** for grinding bones chemicals, paints, etc.; One sft. dia. Disintegrator for grinding bones, chemicals, paints, etc. One 9 x 5 Blake **STONE-BREAKER**. One Ball **MILL** for cements, phosphates, etc. A large quantity of Elevator Chains and Buckets at very low prices.—Apply, *C. E. Hall, 55, Norfolk-street, Sheffield.*

PLATINUM Utensils, Scrap, Lamp Ends, etc. Best Prices given by *Derby and Co., 44, Clerkenwell Road, London, E.C.* N.B.—Platinum Sold.

AMMONIA, all qualities and strengths. Enquiries solicited. *BROTHERTON & Co., Birmingham, Leeds, and Wakefield.*

HARPER'S LIST

OF ACCESSORIES for the TRANSMISSION of POWER, viz.:—BELT PULLEYS, ROPE PULLEYS, GEAR WHEELS, SHAFTING, COUPLINGS, FEDESTALS, FIXINGS; appears on Pages 14 and 15 of the first *Chemical Trade Journal* of each month.

Manlove, Alliott & Co. Ltd., ENGINEERS, NOTTINGHAM.

See Advertisement in first issue of this month.

HENRY ROBINSON,
Maker of Improved Shape Iron Hampers,
Registered No. 80,061.
BRADFORD, MANCHESTER.

ABSOLUTELY PURE SULPHURIC ACID

Guaranteed Free from Ammonia and Nitrogen.

Pure Chemicals. Chemical & Physical Apparatus.
PHILIP HARRIS & CO., Ltd., 144 & 146, Edmund Street, BIRMINGHAM.

J. STIFF & SONS, MANUFACTURERS OF CHEMICAL APPARATUS IN VITRIFIED STONEWARE.

ACID PANS, ACID PIPES & CONNECTIONS, RECEIVERS, CONDENSING
WORMS, RETORTS, COCKS, JARS, BOTTLES & INSULATORS,
BATTERY JARS, POROUS CELLS, &c., &c.
LAMBETH, LONDON, S.E.



"ECLECTIC" (PATENT) THE PATENT "ECLECTIC" DISINTEGRATOR



For Grinding in ONE OPERATION, from coarse to the
FINEST POWDER (VARIED AT WILL)

**MATERIALS OF THE MOST
DIVERSIFIED DESCRIPTION.**

The "ECLECTIC" IS ALSO SPECIALLY VALUABLE
FOR **Chemicals, and Bone Manure, &c., &c.**

Our latest Circular (sent on application) gives over 500 capacities in the
most varied materials (from A to W).

DISINTEGRATOR.

Each Machine complete with
Feeding Hopper and Patent
Return Air Chamber.

**The Grinding Machinery Co.
16, Mark Lane, London, E.C.**

CONVEYORS AND ELEVATORS FOR ALL PURPOSES.

**PURE SULPHUROUS ACID,
SULPHITES AND BISULPHITES OF LIME, SODA, &c.
FOR EXPORT.**
S. KEYS & CO. Limited, WEST BROMWICH.

TUBES

**IRON and STEEL (butt or lap welded),
and FITTINGS** for Gas, Water, Steam, Liquid
Ammonia, and Hydraulic Work,
galvanized white enamelled inside, or coated by Dr. Angus
Smith's Composition. In stock to 8 in. diameter.
COILS for heating, super-heating, distilling and
refrigerating purposes, to 500 feet long without joints.

JOHN SPENCER,
Globe Tube Works, Wednesbury, and 14, Great St.
Thomas Apostle, Cannon-st., London, E.C.

**BRYAN CORCORAN,
MILLSTONE BUILDER.**

**WIRE WEAVER, MACHINE MANUFACTURER,
AND GENERAL MILL FURNISHER.**
Sole Maker of **MILBURN'S**
Patent Conoidal Stone Grinding Mills.

Especially suitable for various
materials, Wet or Dry.

Works and Warehouses:

Back Church Lane. Parcel Dept.: Basement of the
Corn Exchange.
31, MARK LANE, LONDON.

CANNINGTON, SHAW & CO., LIMITED,

CARBOYS.

SHERDLEY GLASSWORKS, ST. HELENS.

Liverpool: Exchange Chambers.
Glasgow: West Campbell-st.

Manchester: Oldham Road,
London: Wrentham Street E.C.

MULTON & CO.,LAMBETH,
LONDON, S.E.FACTURERS OF
NEWWARE
CHEMICAL
APPARATUS
OF
DESCRIPTION.THE LISTS
APPLICATION.**IMPROVED
STONEWARE
ACID PUMPS.**Each Pump prior to
leaving the Factory
is put into actual
work and tested.ROOMS: 17, Deansgate, Manchester; 100, Soho St., Liverpool;
Granville St., Birmingham; 6, Rue de Paradis, Paris.**SPENCE'S
LUMP ALUM**

(POTASH or AMMONIA).

Leading Make for nearly Half a Century.

PURE SULPHATE OF ALUMINA and ALUMINO-FERRIC.

SPENCE & SONS, Manchester Alum Works, MANCHESTER.

BLAYDON MANURE AND ALKALI COMP.'S
WHITE SULPHATE OF ALUMINA,
LANG FIXE, CHLORIDE, NITRATE,
AND SULPHIDE OF BARIUM.UNITED ALKALI COMP.'S
HYPO-SULPHITE OF SODA,WALTHER FELD & CO.'S
PRECIP. CARBONATE OF BARYTES 96/98%.
Hydrate and Anhydrous Alumina, Chloride and Carbonate of
Alumina, Aluminate of Soda, Hydrate of Barium, &c.

JULIUS HULSEN & CO., NEWCASTLE-ON-TYNE.

OVER 25,000 ARE WORKING.

BOILING
NOZZLES.SILENT
HEATERS.VACUUM
EJECTORS.AIR, &c.
EXHAUSTERS.

J. R. & HALL Chief Office } 63, Royal Exchange, MANCHESTER.

Miscellaneous.Replies to Advertisements addressed to the
"Chemical Trade Journal" Office are forwarded to
Advertisers, post free.**BELGIAN GENTLEMAN**, age 35,
not speaking English fluently, good Analytical
Chemist, seeks SITUATION as Assistant in Laboratory;
Diploma. Address, M. 239, *Chemical Trade Journal*
Office, Manchester.**MECHANIC** desires Change; 16
years' experience in a Chemical Works making
Vitriol, Bleach, Alkali, Caustic Soda. Thoroughly under-
stands Engines, Boilers, and Pumps, etc.—Address,
"Mechanic," *Chemical Trade Journal* Office, Man-
chester.**BLACK VARNISH.**—Wanted
RECIPE, 11½ lbs. per gallon, which will not
deposit the Coal Tar Pitch when cold; state fee.—Address
"Var," *Chemical Trade Journal* Office, Manchester.**WANTED.—QUOTATION** for
COPPER HYDRATE, Precipitated with Lime
and Dried, per ton.—Address "J.R.," care of Eason and
Son, Limited, Dublin.**CO₂ ENGINE WANTED;** capacity
about 4,000 cubic feet per hour.—Address, B. 232,
Chemical Trade Journal Office, Manchester.**FOR SALE**, or would take Partner,
SMALL WORKS few miles from Manchester.
Suitable for Soda Crystals, Epsoms, Glaubers, or as a
Works for treating Galvanizers' Flux Skimmings.—Address
W., *Chemical Trade Journal* Office, Manchester.**TO BE SOLD**, the LANCASHIRE
MANURE COMPANY'S WORKS at Widnes
with Machinery and 24,420 square yards of Freehold Land.—
Address J. Hosking, 16, Fenwick Street, Liverpool.**TO BE LET.**—The Aqueduct Works,
Marple, lately in the occupation of The Marple
Chemical Company, suitable for horn pith, precipitated
phosphate, chemical or artificial manure works; good rail-
way and canal accommodation. Apply for further particulars,
"Horn Piths," *Chemical Trade Journal* Office, Manchester.**NEW RECIPES, INVENTIONS,**
& SPECIALITIES in Oils, Greases, Soaps, Paints,
Varnishes, Enamels, Blackings, Blues, Polishes, etc., etc.,
practical working recipes with latest improved English,
Continental and American methods, Prize and Gold
Medal brands Cheapened Substitutes, Utilization of
Wastes and Refuse, etc.; any samples matched. Write
for Lists.—Lewis Jameson, Balmoral buildings, 91, Queen
Victoria-street, London, E.C., and at 47, College-street,
Islington, London, N.**A STEAM FILTER PRESS**
(Johnson) with 20 22-inch plates—engine, pump,
and copper air-vessel. Low price.—R. W. Andrews and
Co., 24, Grays Inn-road, London, W.C.**FOR SALE.**—One 3ft. dia. DISIN-
TEGRATOR for grinding bones, chemicals, paints,
etc.; One 2ft. dia. Disintegrator for grinding bones,
chemicals, paints, etc. One 9 x 5 Blake STONE-
BREAKER. One Ball MILL for cements, phosphates,
etc. A large quantity of Elevator Chains and Buckets
at very low prices.—Apply, C. E. Hall, 55, Norfolk-street
Sheffield.**DISINTEGRATORS.**—A New
Machine for £12., second to none, with 18 inch
grinding chamber. Also Mortar Mill, 5ft. 6in. pan; for
£24. A 10 x 6 New Stone Breaker, for £28.; larger
sizes in proportion, or can be had on hire, with option
of purchase.—Mason Bros., late S. Mason and Co.,
Stone Breaking and Grinding Machine Makers, Brandon-
street, Leicester.**PLATINUM Utensils, Scrap, Lamp**
Ends, etc. Best Prices given by Derby and Co.,
44, Clerkenwell Road, London, E.C. N.B.—Platinum
Sold.**AMMONIA**, all qualities and
strengths. Enquiries solicited.
BROTHERTON & Co., Birmingham, Leeds, and Wakefield.**HARPER'S LIST**OF ACCESSORIES for the TRANSMISSION of
POWER, viz.:—BELT PULLEYS, ROPE PULLEYS,
GEAR WHEELS, SHAFTING, COUPLINGS,
PEDESTALS, FIXINGS; appears on Pages 14 and
15 of the first *Chemical Trade Journal* of each month.

KOENIGSWARTER AND EBELL,

Chemical Works,
LINDEN, near HANOVER.

AMMONIA MURIATE-Nitrate-Phosphate
ANTIMONY DOUBLE SALT 47% & 60/65%
BARIUM CHLORIDE-CHROMATE-NITRATE-OXIDE
CHROMIUM ACETATE-OXIDE
COPPER-OXIDES
CREOSOTE FROM BEECHWOOD TAR
GOLDEN SULPHIDE OF ANTIMONY
GUM ARABIC IMITATION
HYDROFLUORIC ACID
PEROXIDE OF BARIUM
PEROXIDE OF HYDROGEN 30/33 Vol.
PHOSPHORIC ACID
SICCATIVES FOR VARNISH
SODIUM SULPHIDE. SULPHOCYANIDES

Agents for the United Kingdom:-

BERGER, KAHLER & CO.,
7, MARK LANE, LONDON, E.C.

ESTABLISHED 1863.

SULPHUROUS

Acid and Sulphites.

PURE MINERAL ACIDS, ACETIC ACID, ACETATES.

SULPHUR "CROWN" BRAND.

Johnson & Hooper, Stratford, London.

THE "LANCASTER"

STEAM TRAPS
AND PISTONS

ARE ALWAYS SENT ON APPROVAL.

LANCASTER & TONGE, PENDLETON.

LAMP BLACK

JAMES DRINKWATER,
Springfield Lane Chemical Works,
SALFORD,
MANCHESTER.

And other
BLACKS
Loose and in
Packets
for Home and
Export.
Instantaneous
Drying
Black Varnish.

Liverpool: Exchange Chambers.
Glasgow: West Campbell-st.

ABSOLUTELY PURE

SULPHURIC ACID

Guaranteed Free from Ammonia and Nitrogen.

Pure Chemicals. Chemical & Physical Apparatus
PHILIP HARRIS & CO., Ltd., 144 & 146, Edmund Street, BIRMINGHAM

J. STIFF & SONS,

MANUFACTURERS OF

CHEMICAL APPARATUS

IN VITRIFIED STONEWARE.

ACID PANS, ACID PIPES & CONNECTIONS, RECEIVERS, CONDENSING
WORMS, RETORTS, COCKS, JARS, BOTTLES & INSULATORS,
BATTERY JARS, POROUS CELLS, &c., &c.

LAMBETH, LONDON, S.E.



CONVEYORS FOR ALL PURPOSES

ALL SIZES, WITH FITTINGS & TROUCHES
ALWAYS IN STOCK OR PROGRESS

The SPIRAL CONVEYOR Co., 16, Mark Lane

CONTRACTORS TO H.M. GOVERNMENT.

LONDON, E.C.

PURE SULPHUROUS ACID,
SULPHITES AND BISULPHITES OF LIME, SODA,
FOR EXPORT.

S. KEYS & CO. Limited, WEST BROMWICH

TUBES

IRON and STEEL (butt or lap welded),
and FITTINGS for Gas, Water, Steam, Liquid
Ammonia, and Hydraulic Work,
galvanized white enamelled inside, or coated by Dr. Angus
Smith's Composition. In stock to 3in. diameter.
COILS for heating, super-heating, distilling and
refrigerating purposes, to 500 feet long without joints.

JOHN SPENCER,

Globe Tube Works, Wednesbury, and 14, Great St.
Thomas Apostle, Cannon-st., London, E.C.

BRYAN CORCORAN

MILLSTONE BUILDING



WIRE WEAVING MACHINE MANUFACTURERS
AND GENERAL MILL FURNISHING
Sole Makers of MILLBURN
Patent Consolidated Stone Grinding
Especially suitable for
materials, Wet or Dry
Works and Warehouses

Back Church Lane. Parcel Dept.: Basement
Corn Exchange.

31, MARK LANE, LONDON

CANNINGTON, SHAW & CO., LIMITED,

CARBOYS.

SHERDLEY GLASSWORKS, ST. HELENS.

MAS R. B. BINDLEY & SON, Ltd.,
GLUE, GELATINE, and
concentrated Size Manufacturers,
SMETHWICK, near BIRMINGHAM.

HENRY ROBINSON,
of Improved Shape Iron Hampers,
Registered No. 50,061,
BRADFORD, MANCHESTER.

THOMAS W. PILLEY,
ANALYTICAL CHEMIST,
CROVE HILL ROAD, DENMARK HILL.
LONDON.

NURE & CEMENT PLANT
Grinding and Crushing Machinery.
CKERS' MIXERS.
ATCHITT BROTHERS, Carlisle.

nllove, Alliot & Co. Ltd.,
ENGINEERS,
NOTTINGHAM.

Advertisement in first issue of
this month.

FULLER'S
ONE STEAMER.

extracting any of the
Nitrogenous Substance.



Extraction of the Grease
within an hour.

ESTIMATES FOR COMPLETE
STEAMING AND GRINDING PLANT.
GRINDING MACHINERY
EVERY DESCRIPTION OF MATERIAL.

M. FULLER, Jun.,
Great Charles Street, Birmingham.

Telegraph Address:—"VARLEY, ST. HELENS."
ESTABLISHED 1838.

JOHN VARLEY & CO.,
ENGINEERS,
Waterloo Foundry, ST. HELENS.

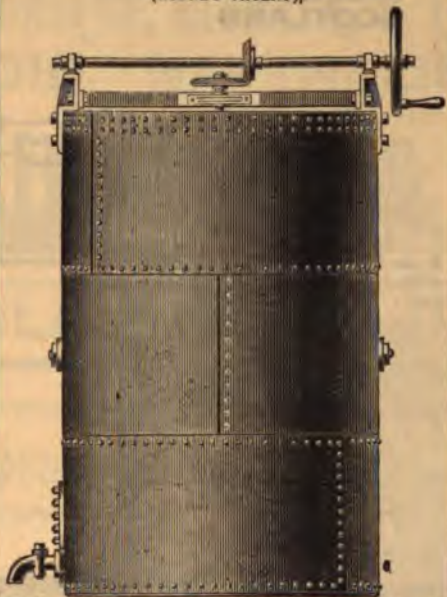
SPECIALITIES:
SALTCAKE POTS. CAUSTIC POTS.
NITRIC ACID RETORTS. ACID EGGS.
Retorts and Stills for Grease for
Woollen Manufacturers.
Stills for Resin and Tar Distillers.

SULPHURIC ACID.
JOHN NICHOLSON & SONS,
LTD., Chemical Works, LEEDS, specially produce
this ACID from BRIMSTONE, for making SULPHATE
OF AMMONIA of high quality and good colour. Delivery
in our own Railway Tank-Wagons or Carboys. Highest
references and all particulars supplied on application.

HARPER'S LIST

OF ACCESSORIES for the TRANSMISSION of
POWER, viz:—BELT PULLEYS, ROPE PULLEYS,
GEAR WHEELS, SHAFTING, COUPLINGS,
PEDESTALS FIXINGS; appears on Pages 14 and
15 of the first *Chemical Trade Journal* of each month.

THE
"ARCHIMEDEAN"
(HORNE'S PATENT),



Mixing Tank for Oils, Spirits and Liquid
Paints, &c.

When the Pan is charged, the liquid is stirred spirally
upwards and downwards alternately by a series of screw
propeller blades fitted on the upright shaft. A MOST
PERFECT MIXER. The Pans are made to work
either by Hand or Power. They are also made Steam-
jacketed and Seamless. For Prices and Particulars, apply
to

THE ARCHIMEDEAN CO.,
6, Starley Road, COVENTRY.



NEW CONVEYOR CO., LTD.,
3 & 4, Lime Street Square,
LONDON, E.C.;

Now ready, with 281 Engravings, 8vo., 18s. 6d.

Bloxam's Chemistry,

INORGANIC AND ORGANIC,
With Experiments.

Eighth Edition, Re-written and Revised,

BY
JOHN MILLAR THOMSON,
Professor of Chemistry, King's College, London,
and

ARTHUR G. BLOXAM,
Head of the Chemistry Department, The Goldsmiths
Institute, New Cross, London.

London: J. & A. CHURCHILL, 11, New Burlington-st.

J. S. MERRY & CO.,
ASSAYERS and ANALYTICAL CHEMISTS
SWANSEA.

Weighing and Sampling of Minerals, Metals, and
Metal Products superintended.

WILLIAM BROWN,
Analyst, Assayer, and Technical Chemist.
Oils, Sugars, Cereals, Wines, General Produce, or Ores, at
Liverpool sampled, tested, and reported upon, for London
or Provincia Houses, with care and despatch, on
reasonable terms.
11, DALE STREET, LIVERPOOL.

ALKALI MAKING PLANT.

Telegraphic Address: FOUNDRY, WIDNES.

Telephone Number: 9, WIDNES.

The Widnes Foundry Comp., WIDNES, LANCASHIRE.

MAKERS OF EVERY DESCRIPTION OF

CHEMICAL MANUFACTURING PLANT

On the most approved Plans, and as supplied to the Principal Alkali Makers in the United Kingdom.

SULPHATE OF AMMONIA PLANT. PLANT FOR THE RECOVERY OF SULPHUR.

PYRITES BURNER FRONTS.

Saltcake Plant complete for Hargreaves and Robinson's Patent Process; Evaporating Pans of the newest designs for Caustic Manufacturers; Castings of every description for the Chemical Trade.

SPECIALITIES.—DECOMPOSING PANS, CAUSTIC POTS, and BOAT PANS
OF THE BEST MANUFACTURE.

Authorised Makers of Complete Plant for the RECOVERY of SULPHUR under Chance's Patents, including Carbonators, Gas Holders, Lime Kilns, Gas Meters, and ironwork for Claus Kilns. Prices on Application.

**PRUSSIAN BLUE, PRUSSIATE of POTASH,
SULPHATE, MURIATE, NITRATE, & LIQUID AMMONIA,
CARBOLIC ACID, NAPHTHALINE, CREOSOTE,**

MANUFACTURED BY

THE GAS LIGHT & COKE CO.
LONDON.

For Samples
and Prices apply—

W. G. BLAGDEN, 4, Fenchurch Avenue, LONDON.

Subscription Order Form.

Telegrams:—"EXPERT," Manchester.

To DAVIS BROS.,

32, Blackfriars Street, Manchester.

Please send to the address in the margin, until countermanded, THE CHEMICAL TRADE JOURNAL, commencing with No.

Enclosed is postal order for 12/6, being the prepaid subscription for the first year, which please acknowledge.

Date,

(Signed)

Z 16

N.B.—Cheques and Money Orders should be made payable to Davis Bros.

WILLIAM OXLEY & CO. Tudor Works,

Pendleton, MANCHESTER

Oxley's Improved Storage Tank

FOR
OILS, PETROLEUM, SPIRITS AND OTHER LIQUIDS.



Manufacturers of Double-Cased Copper Colour Mixing Pans; also of all descriptions of Copper Vessels for mixing, heating, and boiling, Oils, Colours, Chemicals, and other materials; also of Copper Coils and Worms, Rollers, and Printing Machine Troughs, &c.

Gun-Metal Cocks & Swivels,

FOR OILS, SPIRITS, CHEMICALS, & PETROLEUM

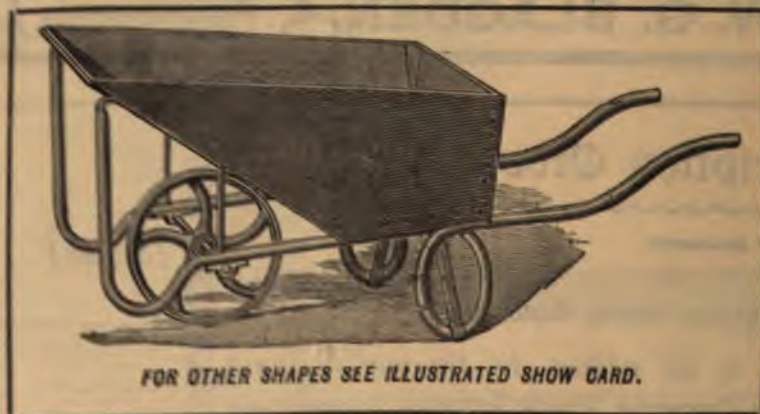


COMPLETE ILLUSTRATED LISTS ON APPLICATION.

PATENT TUBULAR STEEL BARROW

FOR
IRONWORKS, GASWORKS, CHEMICAL WORKS
&c., &c., &c.

Sizes and Prices
on
Application.



Sizes and
on
Application.

FOR OTHER SHAPES SEE ILLUSTRATED SHOW CARD.

F. BRABY & CO., LTD
HATTON GARDEN, LIVERPOOL.

BROOKE, SIMPSON, & SPILLER LIMITED,
ATLAS WORKS,
HACKNEY WICK,
LONDON, E.

THE ORIGINAL MAKERS OF ANILINE DYES.

MANUFACTURERS

OF THE

LARGEST ASSORTMENT IN THE

PRICES ON APPLICATION.

WORLD.

The Clayton Aniline Co., Limited, CLAYTON,

And 26, COOPER STREET, MANCHESTER.



GOLD MEDAL

AT THE

PARIS UNIVERSAL EXHIBITION, 1889.

ANILINE OIL and ANILINE SALT

For DYEING and PRINTING.

3401 *Mirbane, Binitrobenzole, Binitrotoluole, Solvent Naphtha, Patent Odourless Naphtha.*
ANILINE DYES: Patented Specialities.—Carnotine, Aurotine, Clayton Yellow, Cloth Red, Cloth Scarlet, Oxyphenine (the fastest Yellow to light known), Cotton Brown, etc.

I. LEVINSTEIN & CO., Ltd.,

Works: Crumpsall Vale, MANCHESTER.

Warehouse: Minshall Street.

Telephone 272.

Telegrams: "LEVINSTEIN, MANCHESTER."

The Largest Naphthol Colour Manufacturers in Great Britain

Sole Makers in the United Kingdom of the Direct Dyeing Colouring Matters, such as

Congos, Chrysamines, Benzopurpurines, Benzo Blues, Benzo Azurines, etc., etc.

MANUFACTURERS OF

Naphthaline, Nitronaphthaline, Naphthol, Naphthylamine, and their Sulpho Acids.

MAGNESIA

FOR MANUFACTURING PURPOSES.

For Prices and Particulars, apply to

THE WASHINGTON CHEMICAL COMPANY, LTD., WASHINGTON,
COUNTY DURHAM, ENGLAND.



Specialties:
 Acetic Acid
 Benzene
 Carbon Disulfide
 Chloroform
 Ethyl Alcohol
 Glycerine
 Hydrochloric Acid
 Nitric Acid
 Potassium Bichromate
 Potassium Dichromate
 Potassium Permanganate
 Sulfuric Acid
 Tannic Acid
 Zinc Oxide
 Zinc Sulfate

Specialties:
 Acetic Acid
 Benzene
 Carbon Disulfide
 Chloroform
 Ethyl Alcohol
 Glycerine
 Hydrochloric Acid
 Nitric Acid
 Potassium Bichromate
 Potassium Dichromate
 Potassium Permanganate
 Sulfuric Acid
 Tannic Acid
 Zinc Oxide
 Zinc Sulfate

FUERST BROS.,
 Commission Merchants—EXPORTERS.
 17, Philip Lane, S.O. NEW YORK: 2 & 4, Stone Street.
 Telephone No. 1000.
 And all
**HEAVY OR FINE
 CHEMICALS,**
 Pharmaceutical Products,
 Photographic Developers,
 Drysalteries and Drugs,
 also OILS and PRODUCE.
 SAMPLES AND PRICES ON APPLICATION.

GEORGE RUDER BOHLE,
 Chemist, Chemist, Chemist, GERMANY.

SPECIALTIES:
 Specialties: Acetic Acid, Benzene, Carbon Disulfide, Chloroform, Ethyl Alcohol, Glycerine, Hydrochloric Acid, Nitric Acid, Potassium Bichromate, Potassium Dichromate, Potassium Permanganate, Sulfuric Acid, Tannic Acid, Zinc Oxide, Zinc Sulfate.

FREDK. JACKSON & CO.
 (Late Mottershead & Co.)
 10, HALF MOON STREET,
 MANCHESTER.
 Importers, Manufacturers, and Dealers in
CHEMICAL & PHYSICAL APPARATUS
 OF EVERY DESCRIPTION.
 Fine Chemicals, Volumetric Solutions, Plain & Stoppered Bottles,
 AND EVERY LABORATORY REQUIREMENT.
Clear Glass Sample Bottles.
 Illustrated Price Lists Free.

BROADBENT'S HYDRO-EXTRACTOR,
 Direct Steam Driven. No Shafts or Belting Required. Suspended on Links and Requiring no Foundation.

OVER
2,000
 AT
 WORK.



SPECIALLY
 ADAPTED
 FOR
 CHEMICAL
 WORKS.

SEND FOR CATALOGUE.
THOMAS BROADBENT & SONS, LTD.
 CENTRAL IRONWORKS, CHAPEL HILL,
 HUDDERSFIELD, ENGLAND.

"Sanitas" and all other DISINFECTANTS

INCLUDING

Including Fluids, Oil, Powder, Soaps, Disinfectors, Inhalers, Fumigators, Soluble Blocks, Tablets, Antiseptic Dressings, Toilet and Veterinary Preparations, &c.

Kingzett's Patent Sulphur Candles and Sulphugators, Patent Preserved Peroxide of Hydrogen, "Creocide" and Carbolated "Creocide" Fluids and Powder, Carbolic Fluids, Powders, and Soaps, Soluble Carbolated Creosote, Eucalyptus and Peppermint Oils, Corrosive Sublimate Pellets, Sheep Dips, Weed Destroyer, and Drain Tests.

THE SANITAS CO., LTD., BETHNAL GREEN, LONDON, E.

ULTRAMARINE

Of various qualities, for all purposes, and PAPER MAKERS' CHEMICALS, made by
THE UNITED ALKALI COMPANY, LIMITED, NETHAM WORKS,
BRISTOL, ENGLAND.

TO WHOM APPLY FOR SAMPLES AND PRICES.

BUYERS' SAMPLES MATCHED.

AGENTS.—C. TENNANT, SONS & CO., 9, Mincing Lane, LONDON.

A. KLIPSTEIN & CO.,

122, PEARL STREET,

NEW YORK,

Boston, Philadelphia, Chicago, Hamilton, Ont.

IMPORTERS OF

ANILINE COLOURS, DYESTUFFS,

Drysalteries and Chemicals

For Dyers, Bleachers, Calico Printers, Tanners, Wall Paper Manufacturers, Chemical Manufacturers, Glass Makers, Soap Makers, Paper Manufacturers, Paint Manufacturers, Metallurgists, Ink Manufacturers, Chemicals for Electrical and Galvanising Purposes, and other Industries.

EXPORTERS OF

ACETATE OF LIME, QUERCITRON BARK,

SULPHATE OF COPPER, AND OTHER AMERICAN PRODUCTS.

PHOSPHORIC ACID, PHOSPHATE OF SODA.

MANUFACTURERS OF

Phosphate of Soda.
 Phosphate of Ammonia.
 Phosphoric Acid (pure).
 Do. do. (commercial).
 Do. do. (crude).
 Do. do. (solid).

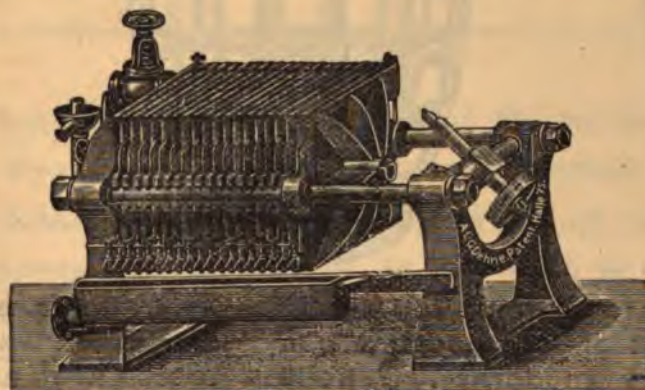
"Tripsa," or Tri-basic Phosphate of Soda for Steam Boilers.

Phosphide of Calcium.
 Phosphate of Lime (pure-precipitated).
 Bi-sulphate of Potash.
 Wood Charcoal.
 Red Liquors.
 Iron do.
 Black Lacquers.
 Black Varnishes, etc., etc.

PERRY & HOPE,
KIRKINTILLOCH, N. B.

DEHNE'S FILTER PRESSES

OVER
 14,000
 DELIVERED.



IN ALL LEADING
 CHEMICAL,
 PAINT AND
 COLOUR WORKS.

SOLE REPRESENTATIVE FOR THE UNITED KINGDOM:—

C. HARZER, 79½, Gracechurch Street, LONDON, E.C.

650 LABOURERS EMPLOYED.

Cotton Filtercloths and Bags. Pure Woollen Filtercloth for Acids.
(UNSHRINKABLE).

THE MANCHESTER TECHNICAL LABORATORY.



Plant designed for Chemical Operations.

New Processes investigated and reported upon.

Trade Analyses undertaken singly or by contract.

Works inspected and advised by contract or otherwise.

Every facility (including power) for Chemical Research.

DAVIS BROS.,

32, Blackfriars St., MANCHESTER.

Re RIVER POLLUTION.

IMPORTANT TO MANUFACTURERS, PAPER MAKERS, DYERS, BLEACHERS, &c.

OUR DOUBLE COMPOUND OF PERSALT OF IRON

(PATENT APPLIED FOR)

Precipitates Rapidly, producing a clear, sparkling effluent, saving time and space; the most economical and efficient precipitate.

APPLIED TO THE MANUFACTURERS—

Messrs. I. LEVINSTEIN & CO., Ltd., Manchester.

BUCKLEY BRICK & TILE CO., Limited,

BUCKLEY, via CHESTER.

JOHN M. GIBSON, Secretary.



"E. H. B." and "F. W." Fire Bricks, Tiles, Lamps, etc., are specially adapted for and much used in Chemical, Lead, and other Furnaces, Coke Ovens, &c.

"METALLINE" for Resisting Acids and Alkali, also for Sewers, Bridges, Docks, Paving, &c. RIDGE TILES, Chimney Tops, Copings, Kerbs, &c. PIPES, Troughs, and other Salt Glazed Ware Ground Fire Clay.

Various Clay Goods made to order.

RED OXIDES

CONTAINING OVER 90% PEROXIDE, OR REDUCED.

VENETIAN REDS.

ADOLPHE CROSBIE, Ltd.,
WOLVERHAMPTON.

Suppliers to Government, the London County Council, &c., &c.

JOHN MCGULLOCH,
CHEMICAL PLUMBER AND GENERAL CONTRACTOR,
LOSTOCK, near NORTHWICH,
CHESHIRE.

DYNAMITE PLANT.

A large experience in the erection of Explosive Plant throughout the country. Estimates given for the erection of Vitriol and Bleach Chambers, Glover and Gay-Lussac Towers, and every kind of Lead-Work connected with the Chemical Trade also Excavating and every kind of Erecting.

THOMAS LOCKER, WARRINGTON,

Manufacturer of

Woven Wire in Steel. Iron, Copper, & Brass in all meshes and strengths.

BRUSHES of all kinds for CHEMICAL WORKS.

WIRE & BRUSHES a speciality for BLEACHING POWDER PLANTS.



DIRECTORY of the CHEMICAL and ALLIED TRADES and BUYERS' GUIDE.

*. The scale of charges for insertions in this Directory will be sent on application.

Acid—
dfield, Brookfield Chemical Works, West
Manchester.

17, Philpot Lane, London, E.C.
Hooper, Stratford, London.

ate of Soda—
R., & Co., Clayton, Manchester
F., & Co., 85 Gracechurch-st. London E.C.

Compressors—
& Co., St. Helens, Lancashire.—*See Advt.*
ros., Atlantic Works, City Road, Manchester.
Son, St. Helens.
& Son, 44, Christian-st., London, E.
s., Pagefield Ironworks, Wigan.

H—
hompson and Co., Ltd., Northwich.
ond & Co., Limited, Northwich.—*See Advt.*
17, Philpot Lane, London, E.C.
Sons, Hapton, Accrington.
Alkali Co., Ltd., Liverpool.

and Sulphate of Alumina—
Alum Company, 7, East India Avenue, London.
H., & Son, West Yorkshire Alum Works
se, nr. Wakefield.

W. & Co., 3, Eastcheap, London, E.C.
en & Co., Newcastle-on-Tyne.—*See Advt.*

inium (pure) in Sheets, Tubes, &c.
5, Fore-st., London, E.C.

onia (880) Manufacturers—
& Co., Commercial Buildings, Leeds.

ne Colours— (don, E.—*See Advt.*
nson & Spiller, Ltd., Hackney Wick, Lon-

yers and Analysts—
32, Blackfriars-st. Manchester.—*See Advt.*

um Salts—
Roberts & Co., Stratford, London, E.
en & Co., Newcastle-on-Tyne.—*See Advt.*

phite of Lime—
Roberts & Co., Stratford, London, E.—*See Ad.*
Hooper, Stratford, London.

sel & Co., Ltd., West Bromwich.—*See Advt.*

phite of Soda—
& Sons, Hapton, nr. Accrington, Lancs.

ching Powder—
Thompson and Co., Ltd., Northwich.
ali Co., Exchange Buildings, Liverpool.

ix—
Ltd. (The), Miners and Manufacturers; Borax
oracic Acid (Gold Medals).—41, Eastcheap,
E.C.
Green, Borax Works, Kidsgrove, Staffs.

k and Tile Manufacturers—
ick and Tile Co., Ltd., Buckley, nr. Chester.

ined Bones—
odes & Co., Bone Works, Church Lancs.

amel (Liquid or Solid)—
Roberts & Co., Stratford, London, *See Ad.*
colle Acid—
& Co. Reddish, Stockport.

board Boxes (folding and others)—
and Sons, Wheat Bridge Mills, Chesterfield.

boys (Glass)—
n Shaw & Co. Ltd., St. Helens.—*See Advt.*

ny Hampers (Iron)—
mper Co., Chestergate Works, Stockport.
& Sons, Orlando Mill, Bolton
H., Bradford, Manchester.

stic Soda—
Jos. & Sons, Warrington.
& Sons, Hapton, nr. Accrington, Lancs.

ali Co., Exchange Buildings, Liverpool.

ent (Portland) Manufacturers—
Ducie-street, Piccadilly, Manchester.

lk (Precipitated)—
17, Philpot Lane, London, E.C.

ical Balances—
as, Sons, & Co., Manchester.

ical and Scientific Booksellers—
Jackson, 1, Paternoster Row, London, E.C.

ical Engineers—
s., 12, Blackfriars-st., Manchester.—*See Ad.*

ical Merchants, Brokers & Agents—
& Hirsch, 28, Exchange-st. East, Liverpool.

s., 17, Philpot Lane, London, E.C.
W. & Co., 3, Eastcheap, London, E.C.
om & Co., 116, Portland-street, Manchester

Chemical Merchants, Brokers & Agents—
Jackson, G. B., 6, Booth-street, Piccadilly, Manchester.
Julius Hülsen & Co., Newcastle-on-Tyne.—*See Advt.*
Somerville Bros., 1, Bury-st., St. Mary Axe, London, E.C.
Taylor, James, and Co., 46 and 47, Tower Buildings,
Liverpool.
Waters, S. F., & Co., 85, Gracechurch-st., London, E.C.

Chemical Plant—
Bailey, W. H., & Co., Limited Salford.
Cortin, J., Newcastle-on-Tyne.—*See Advt.*
Daglish, R. & Co., St. Helens.—*See Advt.*
Davis Bros., 32, Blackfriars-st., Manchester.—*See Advt.*
Neill, W. & Son, St. Helens.—*See Advt.*
Robinson, Cooks & Co., St. Helens.
Rudd Chas. H. C. and Partners, Thistle Works, St.
Anthonys, Newcastle-on-Tyne.

Scott, Geo. & Son, 44, Christian-st., London, E.
Varley John & Co., Waterloo Foundry, St. Helens.
Widnes Foundry Co. Widnes.

Coils (Tubular)—
Lloyd & Lloyd, Albion Tube Works, Birmingham.

Disinfectant Manufacturers—
Sanitas Co., Ltd., Bethnal Green, London, E.

Disintegrators—
Central Cyclone Co., Ltd., 9 and 11, Fenchurch-avenue,
London, E.C.
J. Harrison Carter, Engineers, Dunstable.

Drying Plant—
Erith, Charles & Co., 70, Gracechurch-st., London, E.C.

Drysalts—
Fuerst Bros., 17, Philpot Lane, London E.C.
J. R. Peace & Co., Ormond-st., Liverpool.—*See Advt.*

Dust-Fuel Furnaces—
Meldrum Bros., Atlantic Works, City-rd., Manchester.

Dyers' Chemicals—
Hope, A., jun., & Co., Coatbridge-st., Glasgow.

Filter and Press Cloths—
Porritt Bro. & Austin, Stubbins Vale Mills, Ramsbottom.
Stead J. F., Skinner-lane, Leeds.

Filter-Presses—
(Dehne's) C. Harzer, 79, Gracechurch-st., London, E.C.
Daglish, Robt., & Co. St. Helens.—*See Advt.*
Manlove, Allott & Co., Limited, Nottingham.—*See Advt.*
Neill, W. & Son, St. Helens.—*See Advt.*

Fine Chemicals—
Harris, P. & Co., Limited, 146, Edmund-st., Birmingham

Glass Bottles—
Jackson, F., & Co., 10, Half Moon-street Manchester.

Glue—
Bindley, T. R. B. & Son, Ltd., Smethwick, nr. Birmingham

Glycerine—
Fuerst Bros., 17, Philpot Lane, London, E.C.

Grinding Machinery—
Central Cyclone Co., Ltd., 9 and 11, Fenchurch Avenue,
London, E.C.
Corcoran, B., 31, Mark Lane, London.

Grinding Machinery Co., 16, Mark Lane, London, E.C.
J. Harrison Carter, Engineers, Dunstable.

Hydro-Extractors—
Broadbent, T. & Sons, Chapel-hill, Huddersfield.—*See Ad.*
Manlove, Allott & Co., Limited, Nottingham.—*See Advt.*

Hyposulphite of Soda—
Fuerst Bros., 17, Philpot Lane, London, E.C.
Greiff, R. W. & Co., 3, Eastcheap, London, E.C.

Isinglass Merchants—
Clark, G. and Son, 6, Trinity-square Tower Hill, London,
E.C.
Vickers, James, 6, Devonshire-square, Bishopgate,
London, E.C.

Ivory Black—
Hunt, J. T. & Son, Ltd., Stratford London, E.—*See Advt.*

Laboratory Furnishers—
Harris, P. & Co., Ltd., 146, Edmund-st., Birmingham.
Jackson, Fred. & Co., 10, Half Moon St., Manchester
Woolley, James, Sons & Co., 69, Market St., Manchester.

Lead Salts—
Lindsey, C. R. & Co., Clayton, nr. Manchester.—*See Advt.*

Magnesia—
Washington Chemical Co., Washington, Durham.

Magnesium Salts—
A. Boake, Roberts & Co., Stratford London, E.

Manganese & Mineral Merchants—
Blackwell, Geo. G., Sons & Co., 136, The Albany, Old
Hall-street, Liverpool.—*See Advt.*
Fuerst Bros., 17, Philpot Lane, London, E.C.

Mixing and Kneading Machinery—
Werner, Pfeiderer, & Perkins, Ltd., 43, Regent Square
Grays Inn Road, London, W.C.

Nitric Acid and Nitrates—
A. Boake, Roberts & Co., Stratford, London, E.

Oil & Tallow Refiners & Merchants—
Fuerst Bros., 17, Philpot Lane, London, E.C.
J. R. Peace & Co., Ormond-st., Liverpool.—*See Advt.*

Oxides and Venetian Reds—
Adolphe Crosbie, Ltd., Walsall-st Colour Works
Wolverhampton

Patent Agents—
Redfern G. F. & Co., 4, South-st., Finsbury, E.C.—*See Ad*

Peroxide of Hydrogen—
Burton, W. & Sons, Green Street, Bethnal-green, London
—*See Advt.*

Peroxide of Sodium—
Burton, W. & Sons, Green Street, Bethnal-green, London
—*See Advt.*

Phosphate (Precipitated)—
Marple Chemical Co., Marple, near Stockport.

Phosphoric Acid—
A Boake, Roberts & Co., Stratford, London, E.—*See Ad.*
Fuerst Bros., 17, Philpot Lane, London E.C.

Pitch Importers and Merchants—
J. R. Peace & Co., Ormond-st., Liverpool.—*See Advt.*

Prepared Horn Piths—
Marple Chemical Co., Marple, near Stockport

Pulleys—
Richards Geo., & Co., Limited, Broadbeath.
Harpers Ltd., Aberdeen.

Pulverizers—
Central Cyclone Co., Ltd., 9 and 11, Fenchurch Avenue
London E.C.
J. Harrison Carter, Engineers, Dunstable.

Pumping Machinery—
Bailey, W. H., & Co., Limited, Salford.
Daglish, R., & Co., St. Helens, Lancashire.—*See Advt.*
Neill W. & Son, St. Helens.
Pearn, Frank, & Co., West Gorton, Manchester.
Pulsometer Engineering Co. Ltd. Nine Elms, S.W
Cameron, J., Oldfield-rd., Salford, Manchester.

Refrigerating Machinery—
Neill, W. & Son, St. Helens.—*See Advt.*

Roll and Flowers of Sulphur—
John Riley & Sons, Hapton, nr. Accrington, Lancs.

Sifting Machinery—
J. Harrison Carter, Engineers, Dunstable.

Silicate of Soda—
Crosfield, J., & Sons, Warrington

Steam Boilers—
Daglish, R., & Co., St. Helens.—*See Advt.*

Steam Jet Apparatus—
Meldrum Bros. Atlantic Works, City Road, Manchester

Sulphate of Ammonia Manufacturers—
Brotherton & Co., Commercial Buildings, Leeds.
Hunt, J. T., & Son, Ltd., Stratford, London, E.—*See Ad*

Sulphate of Ammonia Plant—
Daglish, R. & Co., St. Helens, Lancashire.—*See Advt.*
Davis, Bros., 32, Blackfriars-st., Manchester.—*See Advt.*
Neill, W. & Son, St. Helens.—*See Advt.*

Sulphate of Copper—
John Riley & Sons, Hapton, nr. Accrington, Lancs.

Sulphur—
Fuerst Bros., 17, Philpot Lane, London, E.C.
Johnson & Hooper, Stratford, London.
The United Alkali Co., Ltd., Liverpool.

Sulphuric Acid—
Nicholson, John & Sons, Leeds.—*See Advt.*
Riley, J., & Sons, Hapton, Accrington.—*See Advt.*
United Alkali Co., Exchange Buildings, Liverpool.

Sulphurous Acid—
A. Boake, Roberts & Co., Stratford, London, E.—*See Ad*
Keys, Samuel & Co., West Bromwich
Johnson & Hooper, Stratford, London.

Tar Distillers—
Brotherton & Co., Commercial Buildings, Leeds.
Lockwood, H., & Co., Miles Platting, Manchester
Metcalf, J., Altham, near Accrington.

Thermometers and Hydrometers—
Harris, P. & Co. Limited, 146 Edmund-st., Birmingham

Tubes (Gas, Water, and Steam)—
Lloyd & Lloyd, Albion Tube Works, Birmingham
Spencer, John, Globe Tube Works, Wednesbury

Ultramarine—
United Alkali Co., Ltd., Netham Works, Bristol.—*See Ad*

Vacuum Pans—
Manlove, Allott & Co., Limited, Nottingham.—*See Advt.*
Neill, W. & Son St. Helens.

Zinc Salts—
Adley, Tolkien and Co., Ltd., Novas Chemical Works
Paterson-street, Blackburn.
Grimshaw Bros., Ltd., Clayton, near Manchester
Riley, J., & Sons Hapton, Accrington.

BUSINESS CARDS.

Tariff for Card Spaces may be obtained on application to
DAVIS BROS., 32, Blackfriars-street, Manchester.

Sulphuric, Hydrochloric & Nitric Acids
 (Commercial and Pure)

ACETIC ACID.

Also various
 Chemicals.

R. ENGLAND & CO.,
 Chemical Manufacturers and Agents,
36, MARK LANE, LONDON.

Phosphates
 and Fertilizer
 Materials of all kinds.

Disinfectants.

"KILCRUST" BOILER COMPOSITION.

Correspondence Invited.

Established 1860.
The BROADMOOR CHEMICAL Co.
CINDERFORD, GLOS.
 MANUFACTURERS OF
SUGAR OF LEAD,
 WHITE and GREY.
ACETIC ACID, &c.

TRADE SECRETS, RECIPES, WORKING FORMULA
NEW PROCESSES,
 supplied
 by

H. C. STANDAGE
 (Practical Chemist, 20 years' experience)
 Consulting Chemist to the Colour
 Varnish & Leather Trades.
Gravelly Hill, BIRMINGHAM.

Chemical Researches
 made.

Reports on Utilization of
 Refuse and Bi-Products.

Samples of Specialities Matched.
 Strict Confidence.

References to Clients in all quarters of
 the Globe.

TAR PRODUCTS.

SOMERVILLE BROS.,
1, Bury Street, ST. MARY AXE,
LONDON, E.C.

CORRESPONDENCE SOLICITED.

JARED T. HUNT & SON, Limited,

(ESTABLISHED 1820.)

Bow Bridge Works, Stratford, London, E.

SPECIALITIES:

Animal Charcoal of the various sizes used.

IVORY BLACK. BONE SULPHATE OF AMMONIA.

PURE BONE PITCH.

Also Manufacturers of HIGH-CLASS MANURES for EXPORT for
 COFFEE and SUGAR PLANTATIONS. [106c]

H. LOCKWOOD & CO.,
Manufacturing Chemists and Tar Distillers,

Works:—VICKERS STREET, MILES PLATTING, MANCHESTER;

ASHTON NEW ROAD, BRADFORD, MANCHESTER.

Concrete Works:—MINSHULL STREET, MANCHESTER.

Office:—7, CHAPEL WALKS, MANCHESTER.

Benzol, Solvent Naphtha, Burning Naphtha, Creosote, Pitch, &c., &c.

PURCHASERS OF TAR AND AMMONIACAL LIQUOR.

[1072]

J. H. COOKSON & SONS,
WEST YORKSHIRE ALUM WORKS,
LOFTHOUSE. near WAKEFIELD.

Potash or Ammonia Alum, Lump or Ground;
 also Sulphate of Ammonia, &c.

DR. QUIRIN WIRTZ, M.A., F.I.C.,
 (LATE EVANS & WIRTZ),
Analytical & Consulting Chemist.

By appointment to the Paper Makers' Association of Gt. Britain & Ireland.

28, Great Ormond St., LONDON, W.C.

Telegraphic Address: "RECOVERY, LONDON."

ACETATE OF LIME,
SULPHATE OF COPPER,
ACETONE,

And other American Products. Quotations c.i.f. any European Port
 (in the currency of the respective countries) furnished on application.

SCHOELLKOPF, HARTFORD, & MACLAGAN, Ltd.,
3, CEDAR STREET, NEW YORK.

Cable Address: "JUBILANT, NEW YORK."

JOSEPH TAYLOR & CO.,
CHEMICAL PLUMBERS,
 Central Plumbing Works, Town Hall-square,
BOLTON.

Lead Burning, Chemical Plumbing, Solid Plate Lead
 Saturators, Acid Tanks, Elevators, and all Lead Work
 for Gas and Chemical Works.

Acid Cocks, Valves, and Lead Pipes, up to six inches diameter, and
 half-inch thick, kept in stock. ENQUIRIES SOLICITED.

AMMONIA

ANHYDROUS AMMONIA

(As supplied to the LINDE BRITISH REFRIGERATION COMPANY).

LIQUID AMMONIA.

·880 Fort. PURE, and lower strengths.

NITRATE OF AMMONIA.

SULPHATE OF AMMONIA

For Agricultural Purposes.

Proprietors of the "STANDARD DOMESTIC AMMONIA."

MANUFACTURED BY

THE STANDARD AMMONIA CO., Ltd.,

Iceland Wharf, Old Ford, London, E.

COAL TAR PRODUCTS DISINFECTANTS

CARBOLIC ACID.

Carbolic Disinfecting

Powders (Various strengths)

Carbolic Disinfecting

Tablets.

CRESYLIC ACID.

NAPHTHA (Burning).

NAPHTHA (Solvent)

For Dissolving India-rubber.

BLACK VARNISH

(All Prices).

**SHEEP DIP.
DISINFECTING
FLUIDS**

(Soluble in Water).

NITRO-NAPHTHALINE

(For Deblooming Mineral Oils).

CREOSOTE OILS.

HEAVY TAR OILS.

BRITISH ASPHALTE.

REFINED TAR.

GREASE

Of All Kinds

MOTHETICA (A Cheap and Most Efficient Substitute for Camphor).

SEND FOR PRICES AND PARTICULARS TO THE MANUFACTURERS—

FORBES, ABBOTT & LENNARD,
EAST GREENWICH, LONDON, S.E.

THE
 STANDARD
 AMMONIA
 CO.
 LTD.
 LONDON, E.C.

AMMONIA

LIQUID AMMONIA

NITRATE OF AMMONIA

SULPHATE OF AMMONIA

AMMONIUM SULPHATE DOMESTIC AMMONIA

THE STANDARD AMMONIA CO. LTD.

10, Abchurch Lane, London, E.C. 4.

COAL TAR

PRODUCTS

DISINFECTANTS

Carbolic Acid
 Cresylic Acid
 Eucalypti Extract
 Glycerine
 Phenyl Acetylene
 Salicylic Acid
 Sterilising Solution
 Tincture of Iodine

BLACK LINT

BLEACHING
 FLUIDS

ANTISEPTIC

CHEMICAL GLASS
 STAINLESS STEEL
 BRASS
 COPPER
 ZINC
 ALUMINUM
 IRON
 STEEL

MOTHERICA (A Brand of Red Cross Society of America)

FORBES, ABBOTT & LEITCH,
 EAST DORSET, LONDON, E.C.

OCT 27 1937

4/

OCT 27 1937

OCT 27 1937

